



LUFTWAFFE COLOURS



# AUFLÄRER

Volume Two

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LUFTWAFFE  
RECONNAISSANCE  
AIRCRAFT AND UNITS

1942-1945



# 1942-1945

LUFTWAFFE  
RECONNAISSANCE  
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*'Observation should provide a reliable and complete picture of the situation with all possible speed.'*

*'Observation reports will provide the foundation for the decision of the leadership, and for unit battle operations.'*

*Luftwaffe Regulation 16, The Conduct of the Aerial War, Section III (79),  
Wilberg, Helmuth et al., 1935.*

## Changes 1942



Ritterkreuzträger  
General der Flieger  
Rudolf Bogatsch  
served in the German  
Army during First  
World War, and by 1917  
held a staff position on  
the High Command of  
the 7. Armee. Following  
the cessation of  
hostilities, he joined the  
Reichswehr where he  
held a number of  
important positions  
until being assigned to  
the RLM in early 1933.  
Following this  
assignment, he again  
held a number of  
important Luftwaffe  
posts throughout the  
war and was awarded  
the Ritterkreuz in  
March 1942 while  
Gen.d.Lw.b.ObdH.  
He was taken prisoner  
by US forces on 4 May  
1945.

For the first two years of the Second World War, liaison between the *Luftwaffe* and its supported army commands had worked reasonably well. However, with the onset of Operation *Barbarossa*, the German invasion of Russia in June 1941 and the excessive demands it made on the forces available, this liaison, most notably at the tactical level, was subjected to an additional strain that saw certain debilitating factors emerge.

The extent of the theatres in which the ground forces of the *Heer* (Army) were now operating and their requirements for *Luftwaffe* support quickly revealed that the *General der Luftwaffe beim Oberkommando des Heeres*<sup>1</sup> and his subordinate *Koluf<sup>2</sup> attached to the various army commands were unable to meet adequately the demands of the armies involved. Nor could they bring the necessary influence to bear in matters of the tactical employment, training, replacement of aircraft and crews, provision of supplies and relevant disciplinary matters for the units under their command.*

As one such example of the erosion of this influence, by the early autumn of 1941, the operational serviceability of many of the short-range reconnaissance *Staffeln* allocated to the Army on the Eastern Front had dropped to a very low level. This was due not only to a high attrition rate in aircraft and aircrew and the unusually early onset of winter but also to the inadequate flow of replacements, a shortage of spare parts and aviation fuel, which, by early December, saw the operational strength of many of these *Staffeln* down to less than three aircraft. By the end of that month, their operational serviceability had fallen to a level whereby of the more than 50 that had participated in the early stages of *Barbarossa*, less than 20 were available for operations; a similar situation was also to be found amongst the strategic (long-range) *Staffeln*.

Furthermore, the *Flivo*'s<sup>3</sup> and their staff assigned to these army commands by the cooperating *Fliegerkorps*, which hitherto had collaborated reasonably well with those of the *Koluf*, now created a dual level of *Luftwaffe* representation which was found to be illogical, undesirable and the source of much friction.

By mid-November 1941, it had become clear that these two levels of liaison, which placed some *Staffeln* under the control of a *Koluf* and others under that of a *Fliegerkorps*, aside from creating unnecessary duplication, also created a waste of valuable resources. Because of these concerns and the inability of the *Gen.d.Lw.b.ObdH* to bring the *Staffeln* under his control up to full strength and maintain their operational capability, it became necessary to re-examine consolidating the reconnaissance needs of the Army with those of the *Luftwaffe*.



A Henschel Hs 126,  
V7+FS of the 8.(H)/32  
preparing to depart on  
a sortie from the area  
of Schumariowo during  
the late autumn of 1941  
while operating with  
the PzK LVI and under  
the control of the  
*Koluf* 4, Panzergruppe.  
Finished in standard  
70/71/85 camouflage,  
the individual aircraft  
letter is in the Staffel  
colour of red while on  
the side of the fuselage  
aft of the cowling is  
seen the Staffel  
emblem based on the  
arms of the town of  
Bromberg where it was  
formed in February  
1941.



Generaloberst Franz Halder entered the army in 1902 and held various staff appointments during the First World War. When Hitler seized power in 1933, Halder was Chief of Staff of a military district, and in 1936, joined the General Staff as a training and manoeuvres specialist. In August 1938, he was appointed Chief of

Army General Staff, a post he held until his resignation in September 1942. As an eminent strategist, Halder often found himself at odds with Hitler, which eventually prompted his decision to resign. Arrested by the Gestapo in 1944 and accused of being involved in the July plot to assassinate Hitler, he was incarcerated in Dachau concentration camp where he remained until being freed by US forces in May 1945.



A former aerial observer, following the end of the First World War, Günther Lohmann served in several positions within the Reichswehr until October 1934 when he transferred to the Luftwaffe as Officer with Special Duties of the RLM. From August 1938 until May 1939, he served first as the commander of AufklGr. 52 and then commander of AufklGr. 41 until taking command of the III. Gruppe of Reconnaissance Training Wing 2 on 25 May 1939. From August 1939 until 15 May 1942, he held the position of Luftwaffe commander with the following army commands: 6. Armee, 10. Armee, Panzerguppe 4 and 4. Panzer Armee. On 16 May 1942, he became General der Aufklärungsflieger and Luftwaffe General with the OKH, a position he held until November 1942. Subsequently holding a number of important command positions, he was taken prisoner by US forces on 8 May 1945.



A former First World War army officer, Karl-Henning von Barsewisch joined the Luftwaffe reserve in 1935, and in August 1938 was accepted into the Luftwaffe active officer corps where he served as a Staffelkapitän with the AufklGr. 24. Between January 1939 and June 1942, he served in a number of senior positions including commander of

AufklGr. 123, chief of operations to the Luftwaffe commander with the 18. and 4. Armee while latterly serving as acting Luftwaffe commander with the 4. Armee followed by a brief period as the Luftwaffe commander with Panzerguppe 2. On 5 June 1942, he was appointed chief of operations to the staff of the Gen.d.Lw.b.ObdH. A driving force behind the reorganisation of Luftwaffe reconnaissance units, he was appointed General der Aufklärungsflieger on 28 November 1942, a position he would retain until his capture by Allied forces on 8 May 1945.

Accordingly, on 8 December 1941, rather than let this unsatisfactory state of affairs continue, the Gen.d.Lw.b.ObdH, General der Flieger Rudolf Bogatsch and Generaloberst Franz Halder, the *Chef des Generalstabs des Heeres*<sup>1</sup>, met to begin a series of discussions on the reorganisation of Luftwaffe reconnaissance responsibilities for the Army. It is, however, interesting to note at this point that the subject of returning control of all army reconnaissance requirements to the *Luftwaffe* was not a new one. Having been introduced for discussion at OKW level as early as the middle of 1940, the proposal had encountered strong opposition from the *Chef des Generalstabs des Heeres* who at that time, was reluctant to see the Army become more dependent on the *Luftwaffe* than it already was. In addition, the Army had pointed out that strategic reconnaissance for the purpose of aerial operations was often carried out in accordance with a different perspective to that essential to Army requirements.

Following several months of discussion, an agreement reached in the spring of 1942 and the subsequent issue of *GenStdH* order Nr. 1483/42 of 19 April 1942 saw the position of Gen.d.Lw.b.ObdH consolidated with that of *General der Aufklärungsflieger*<sup>2</sup>, the *Koluff* positions eliminated and responsibility for all aerial reconnaissance for the Army returned to the *Luftwaffe*. The Army and its subordinate commands could no longer order reconnaissance missions; they could only request them. There would be no more separate reconnaissance flights; a single mission would provide for both, the one exception to this being long-range army reconnaissance which was subordinated to the relevant *Luftflotte* command.

To carry out and oversee this reorganisation, Rudolf Bogatsch was transferred to the *RLM* and his place taken by former First World War aerial observer, Generalleutnant Günther Lohmann, who was given the dual role of *General der Aufklärungsflieger* and Gen.d.Lw.b.ObdH. Lohmann retained these dual commands until 27 November 1942, when he was replaced as *General der Aufklärungsflieger* by his *Ia*<sup>3</sup>, General Karl-Henning von Barsewisch, the originator and main driving force behind this reorganisation who would retain the position of *General der Aufklärungsflieger* until the end of the war.

This same order also reorganised *Luftwaffe* reconnaissance units. The *Aufklärungs (H) Staffeln* were assigned to the newly formed *Nahaufklärungsgruppen* (Short-range Reconnaissance Groups - abbr. *NAGr.*) while similarly, the (F) *Staffeln* were to be incorporated into *Fernaufklärungsgruppen* (Long-range reconnaissance Groups - abbr. *FAGr.*).

1. Luftwaffe general on the Staff of the Army High Command. Abbr. Gen.d.Lw.b.ObdH
2. Kommandeur der Luftwaffe bei einem Armeoberkommando (Luftwaffe commander on staff to an Army Group or headquarters command)
3. Fliegerverbindungsoffiziere – Air Liaison Officers
4. Chief of the Army General Staff
5. General of Reconnaissance
6. Chief of Operations

# The Nahaufklärungsgruppen



Airborne near Petsamo in early 1943, Focke-Wulf Fw 189 A-2, V7+IE of the 1.(H)/32, displays a consistently applied pale grey or white scribble pattern over its normal 70/71 segmented upper camouflage. In the case of Fw 189s finished in this scheme, the pattern was originally thought to have been applied at unit level, but according to surviving Czech records from the Aero factory in Prague, it was factory applied. Interestingly, Aufk/Gr. 32 used a unique unit code system for its aircraft with the third figure of the code being a number identifying the Staffel and the fourth, a letter, being the individual aircraft letter. Thus V7+IE identifies this aircraft as being aircraft 'E' of the 1.(H)/32.

various *Nahaufklärungsgruppen*. Some examples were the 1.(H)/10 which became the 1.NAGr. 12 in April 1943, the 4.(H)/12 which became the 2./NAGr. 11 in November 1943 and the 1.(H)/41 which, in December 1943 became the 2./NAGr. 14.

These original sixteen Stab and their initially assigned Staffeln were as follows:

## **Stab/NAGr. 1**

Formed under Major Gustav-Wilhelm Pettenpaul, in South Russia from the *Kolult Panzer AOK 1* with a Stab, Stabs-Kompanie<sup>2</sup> and *Ln.Betr.Komp. (mot.)*<sup>3</sup>. In May 1942, its assigned Staffeln were the 5.(H)/11 and 3.(H)/31. On 1 February 1944, the 5.(H)/11 was redesignated as the 1./NAGr. 8 while earlier, on 1 March 1943, the 3.(H)/31 had become the 3./NAGr. 2. Also, as with NAGr. 6, the NAGr. 1 had begun to receive reconnaissance models of the Messerschmitt Me 262 but little is known of its activities at this time.



These two views show Messerschmitt Me 262 A-1a/U3, 'White 2', which was reportedly assigned to the 1./NAGr. 1. Unlike the Me 262s of the NAGr. 6, which used white outline aircraft numbers, the numbers used by the 1./NAGr. 1 were applied in solid white with a thin black outline. Interestingly, the bands on the nose were reported to have been in the then German national colours of red, white and black and mirroring their order as seen on the roundel that formed a central part of the insignia carried on an officer's forage cap. This device was often referred to as the 'Eye of Germany' and its application to a reconnaissance aircraft was very likely a specific play on this term.

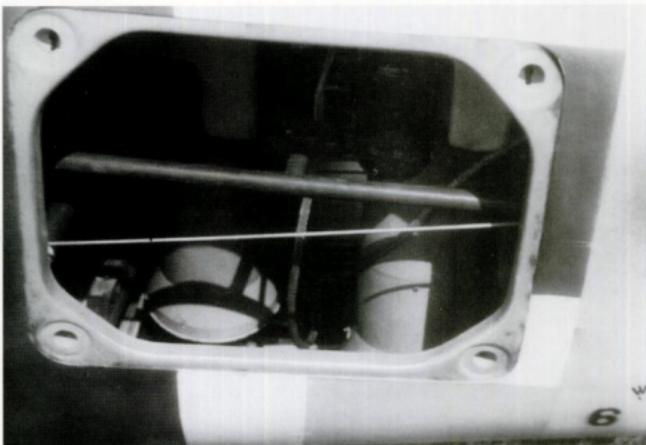
## **Stab/NAGr. 2**

Formed under Obstlt. Heinz Heinsius in Central Russia from *Gruppenfliegerstab 13*, with a Stab, Stabs-Kompanie and *Ln.Betr.Komp. (mot.)*. The Stabs-Kompanie was disbanded in April 1943. The Staffeln initially assigned in May 1942 were the 3.(H)/21, 2.(H)/23 and 1.(H)/41.

## **Stab/NAGr. 3**

Formed in Central Russia from *Gruppenfliegerstab 14*, with a Stab, Stabs-Kompanie and *Ln.Betr.Komp. (mot.)*. The Stabs-Kompanie was disbanded in July 1944. Assigned Staffeln in May 1942 were the 3.(H)/11 (re-formed from the 3.(F)/11 in January 1942) and the 3.(H)/14.

**F**irst formed in May 1942, the *Stab* and *Stabs-Kompanie* for each of the sixteen new short-range *Gruppen* were created from eight of the ten existing *Gruppenfliegerstab*<sup>1</sup>, three short-range *Staffeln* and eight of the twenty-seven *Kolult* assigned to the various army and *Panzerarmee* headquarters. The number of *Staffeln* assigned to each was dependent upon the prevailing operational requirements, and while a number of these retained a semi-independent status until late in the war, the majority were re-formed into *Staffeln* within the



**Staffel Bildstelle**  
personnel of the  
1./NAGr. 2 are seen  
here fitting one of the  
paired Rb 12.5/7x9  
cameras into the rear  
fuselage of a  
Bf 109 G-8 of the  
Staffel. Formed in  
Russia from the  
4.(H)/10 on 1 March  
1943, the Staffel  
disbanded at Olmütz  
(now known as  
Olomouc, in the Czech  
Republic) in March  
1945.



A view showing the  
paired Rb 12.5/7x9  
cameras installed in  
the rear fuselage of a  
Messerschmitt  
Bf 109 G-8 of the  
1./NAGr. 2.

In this photograph  
taken at either Lucko  
or Gorica in the  
Balkans in September  
1944, Oblt. Kratz of the  
3./NAGr. 2 is seen  
beside his  
Messerschmitt  
Bf 109 G-8 'Yellow 3'  
following the  
conclusion of his 80th  
mission together with  
Major Tüttleman,  
Obl. Zimmermann and  
Obl. Schmidt. Formed  
from the 3.(H)/31 in  
Russia in March 1943,  
the Staffel re-formed  
Germany as the  
2./NAGr. 15 in  
December 1944.

### **Stab/NAGr. 4**

Formed in South Russia from Gruppenfliegerstab 10, with a Stab, Stabs-Kompanie and Ln.Betr.Komp. (mot.). The Stabs-Kompanie was destroyed at Stalingrad in January 1943. The first Gruppenkommandeur is believed to have been Obstlt. Günther Börner. Its assigned Staffeln in May 1942 were the 6.(H)/13 and 2.(H)/41.

### **Stab/NAGr. 5**

Formed in Central Russia from the Kommandeur der Luftwaffe Armee-Oberkommando 9, with a Stab, Stabs-Kompanie and Ln.Betr.Komp. (mot.). The Stabs-Kompanie was formed from the 5. (H)/Aufkl.Gr.23, and was disbanded in October 1943. The Stab was disbanded in March 1945. The Staffeln assigned to the Stab in May 1942 were the 1.(H)/11 and the 2.(H)/12.

### **Stab/NAGr. 6**

Formed in South Russia under Obstlt. Richard von Korff from the Kommandeur der Luftwaffe Armee-Oberkommando 4, with a Stab, Stabs-Kompanie and Ln.Betr.Komp. (mot.). The Stabs-Kompanie was disbanded in December 1944. Its assigned Staffeln in May 1942 were the 7.(H)/13 and the 2.(H)/33.



A pilot of the NAGr. 5 is seen here being congratulated upon the completion of his 200th sortie. Behind him, his Bf 109 G-6 or G-8 is fitted with the so-called Erla-Haube (Erla-canopy) and has the antenna mast removed.



Taken at Dünaburg (Daugavpils) in Eastern Latvia in mid-1944. Ohw. Aechtner, one of the most experienced pilots of the 1./NAGr. 5, poses with two members of his ground crew in front of their Messerschmitt Bf 109 G-8. Formed in September 1943 in northern Russia from the 2.(H)/21, the Staffel remained in operation until disbanding at Cirava, Latvia, in March 1945.



These two views of Messerschmitt Me 262 A-1a/U3 'White 34', W.Nr. 500004, of the 2./NAGr. 6 were taken shortly after the cessation of hostilities in Europe. Interestingly, it has been fitted with a standard gun nose, and as may be seen in the second view, the tops of the main wings are devoid of both camouflage and Balkenkreuze. The actual location is uncertain other than that given in the legend on the back of the original print, which simply states 'south of Munich, May 1945'.



1942-1945



These two views of Messerschmitt Me 262 A-1a/U3 'White 33', W.Nr. 500539 of the 2./NAGr. 6 found abandoned amidst other Me 262 airframes at Lechfeld in May 1945, provide a good view of the heavily applied mottle found on a number of A-1a/U3 airframes while in the second, the stencilled W.Nr. below the tail plane is clearly visible.



#### **Messerschmitt Me 262 A-1a/U3 'White 33', 2./NAGr. 6**

The aircraft was finished in an overall light coat of 65 or 76 with the upper surfaces covered in a randomly applied mottle of two greens. While the exact identity of these two greens is unknown, based on information provided by original German sources, the colours used in these particular applications were simply based on the availability of material and were most commonly a combination of any two of the colours 70, 71, 81 or 82. In common with other Me 262 aircraft of NAGr. 6, the individual aircraft number was applied in a simple white outline on each side of the fuselage beneath the cockpit windshield.

On 6 November 1944, Heinz Schütze, a Major on the staff of the General der Aufklärungsflieger, Generalmajor Karl-Henning von Barsewisch, issued orders for the formation of a specialised tactical jet reconnaissance Gruppe to be known as NAGr. 6. Accordingly, on 30 November, Kommando Brauneck, with three serviceable Me 262s and four pilots, transferred from Lechfeld to Schwäbisch-Hall to operate under Obst. Hentschel's 5.Jagddivision at Durlach. It was absorbed into NAGr. 6 as the 2. Staffel at the end of January 1945.

#### **Stab/NAGr. 7**

Formed in South Russia under Major Kurt Stollberger from the Kommandeur der Luftwaffe Armee-Oberkommando 6 with a Stab, Stabs-Kompanie and Ln.Betr.Komp. (mot.). It was disbanded in February 1943 after suffering heavy losses at Stalingrad. In May 1942, its assigned Staffeln were the 1.(H) and 4.(H)/10. On 1 March 1943, the 4.(H)/10 was redesignated as the 1./NAGr. 2 and was followed on 1 April by the 1.(H)/10 which was redesignated as the 1./NAGr. 12.

#### **Stab/NAGr. 8**

Formed in central Russia from Kommandeur der Luftwaffe Armee-Oberkommando 11, with a Stab, Stabs-Kompanie and Ln.Betr.Komp. (mot.). The Stabs-Kompanie was formed from the 6.(H)/Aufkl.Gr.12, and was disbanded in May 1944. The Staffeln assigned to the Stab in May 1942 were the 3.(H)/13 and 4.(H)/31.

#### **Stab/NAGr. 9**

Formed in South Russia from Kommandeur der Luftwaffe Armee-Oberkommando 17, with a Stab, Stabs-Kompanie and Ln.Betr.Komp. (mot.). It was disbanded in April 1944. Assigned Staffeln in May 1942 were the 1.(H)/21 and 7.(H)/32. On 1 June 1944, the 1.(H)/21 was redesignated as the 1./NAGr. 3 while the 7.(H)/32 served consecutively under the Stabs of NAGr. 9, 6 and 2 before being disbanded in November 1944.

The 2.(H)/31 crew  
(left to right) of  
Lt. Georg Pemler,  
Ofw. Holzhey and  
Uffz. Godhusen are  
pictured here in front  
of their winter  
camouflaged  
Fw 189 A at an airfield  
near Kursk in January  
1943.





A member of the ground crew makes final adjustments to the seat harness for the pilot of this winter camouflaged Fw 189 A-2 of the 2.(H)/31 prior to its departure from an unidentified location on the Eastern Front in the winter of 1942. Originally assigned to operate under the Stab/NAGr. 10, it operated briefly under the Stab/NAGr. 1 during November 1941 and August 1943, and then the Stab/NAGr. 6 from September 1943 until January 1944. On 1 February 1944, it was redesignated as the 3./NAGr. 4 and the following December was again redesignated, this time as the 1./NAGr. 15 under which identity it is believed to have disbanded at Bautzen in March 1945.



As with other reconnaissance units as the war in the East progressed, the 2.(H)/31 were often called upon to conduct anti-partisan operations both in the Balkans and on the Eastern Front. In this view, armourers are seen loading SC 50 bombs to the ETC 50/VIII bomb-carriers beneath the port wing of one of the aircraft of the Staffel in preparation for such a mission on the Eastern Front in 1943.

### **Stab/NAGr. 10**

Formed under Obstlt. Werner Stein in Peresucha from Kommandeur der Luftwaffe Armee-Oberkommando 2 with a Stab, Stabs-Kompanie and Ln.Betr.Komp. (mot.). The Stabs-Kompanie was formed from the 6.(H)/Aufkl.Gr.21. It was disbanded on 20 October 1944. Its assigned Staffeln in May 1942 were the 2.(H)/10, the 2.(H)/31 and the 5.(H)/32.

### **Stab/NAGr. 11**

Formed under Oberst. Paul-Robert Matusek in Central Russia from the Kommandeur der Luftwaffe Heeresgruppe Nord and the 1.(H)/Aufkl.Gr. 14 with Stab, Stabs-Kompanie and Ln.Betr.Komp. (mot.). It was disbanded on 13 March 1945. The Staffeln assigned in May 1942 were the 1.(H)/13, the 4.(H)/23 and the 1.(H)/31.



NAGr. 11 emblem



A three-quarter rear view of Focke-Wulf Fw 189 A-1, 5D+KH of the 1.(H)/31 taken somewhere on the Eastern Front, possibly near Demyansk in early 1942. The temporary white winter camouflage has worn off from most of the upper surfaces, with the exception of the rear tail areas and portions of the rear fuselage and starboard wing. Although barely evident in this photograph, the aircraft letter 'K' has a thin white outline.

A Messerschmitt Bf 109 G-4/R3 of the NAGr. 11 fitted with a pair of 300 litre auxiliary fuel tanks. Also visible in this view is the drainage pipe running from the aft edge of the lower cowling to beyond the trailing edge of the wing. This was a prominent feature of camera-equipped Bf 109s and was used to ensure that any leaking oil or fluids were ejected clear of the ventral camera window. Many camera-equipped Bf 109s featured two such pipes, one for each side of the cowling.



*Below: Members of the 2./NAGr. 11 congratulate the pilot of 'White 6' and his wingman at Campoformido upon completion of the 4000th Feindflug flown by the Staffel, one of whom is holding a decorated banner featuring the Staffel emblem of a prancing white horse superimposed on a red shield.*



Bf 109 G 'White 6' of the 2./NAGr. 11 is seen here returning to its Italian base at Campoformido after completing the 4000th sortie flown by the Staffel and may well be a G-8/R5 with which the Staffel was gradually re-equipped from July 1944.

Contrary to normal practice, the aircraft of the 2. Staffel used white numerals while those of the 1. Staffel used black. As also seen in this view, the individual numbers applied to the aircraft of the 2. Staffel were smaller than the standard format usually seen on single-engined fighter aircraft.

### **Stab/NAGr. 12**

Formed under Major Hans von Berchem in South Russia from Gruppenfliererstab 31 with a Stab, Stabs-Kompanie and Ln.Betr.Komp. (mot.). The Stabs-Kompanie was destroyed at Stalingrad; the Stab was disbanded in April 1945. Assigned Staffeln in May 1942 were the 6.(H)/41 and the 7.(H)/LG 2.

### **Stab/NAGr. 13**

Formed in North Russia from Gruppenfliererstab 41 with a Stab, Stabs-Kompanie and Ln.Betr.Komp. (mot.). The first Gruppenkommandeur is believed to have been Major Georg Warnat. Staffeln assigned in May 1942 were the 2.(H)/21, the 3.(H)/41 and the 4.(H)/33. On 1 October 1942, the 4.(H)/13, which until then had been operating with the 14. PzD in PzK III under the control of the Koluft 1. Panzergruppe, was redesignated as the 1./NAGr. 13 and ended the war at Schleissheim where it was disbanded on 27 April 1945.

### **Stab/NAGr. 14**

Formed in South Russia under Major Joachim Gerndt from Gruppenfliererstab 21 with a Stab, Stabs-Kompanie and Ln.Betr.Komp. (mot.). The Stabs-Kompanie was disbanded in December 1943. Its assigned Staffeln in May 1942 were the 2.(H)/32 and the 5.(H)/41. The 2.(H)/32 was disbanded in January 1943 but the 5.(H)/41 remained in service and on 1 June 1944 was redesignated as the 2./NAGr. 3.





Opposite page left and above: An example of adapting camouflage to suit local operating conditions may be seen in these four views of 'White 14', the Bf 109 G-8 usually flown by Leutnant Heimo Emmersdorfer of the Z/NAGr. 12 in Albania during the summer of 1944. 'White 14' clearly wears a camouflage scheme carefully applied at unit level that better reflected the northern Mediterranean terrain over which the Staffel operated from its base at Mostar in Albania. In correspondence with two former ground crewmembers of the Staffel, the aircraft's colours were described to the author as 'brown and grey', the former

most certainly 79 Sandgelb. The latter colour is clearly lighter than the underside 76 Graublau, probably either a field-mixed much lightened version of this colour or perhaps even a lightened application of either of the greys 74 or 75. It was applied liberally over much of the original standard 74/75 grey scheme, wing Balkenkreuze and wrapped around the wing leading edge. A softly sprayed zigzag pattern of 79 applied in grouped narrow bands completed the scheme. Two other aircraft of the Staffel were similarly finished but in extant photos of these, no aircraft number can be determined.



NAGr. 13 emblem

These two views show three Focke-Wulf Fw 190 A-4/U4s of the Stabskette of NAGr. 13 prior to departing on a sortie from their French base at either St. Brieuc or Dinard in mid-1943. The revised fin antenna anchor point and open cowling gills identify the aircraft in the foreground as an early A-4 model.



#### Focke-Wulf Fw 190 A-4/U4, code <=+- of the Stabskette NAGr. 13

The aircraft is finished in the standard mid-war day fighter scheme of 74, 75 and 76 with the tactical markings on the rudder and lower cowling section in 04 yellow and black-painted louvred panel behind the exhausts. The unusual Stab markings of a chevron, paired horizontal bars and a single horizontal bar were black with white outlines bordered by a thin black line. The NAGr. 13 emblem was carried on both sides of the forward cowling and consisted of a brown eagle swooping over dark coloured cliffs and blue and white waves on a white or pale blue sky background within a shield.

1942-1945



A Henschel Hs 126, 4E+OM of the 4.(H)/13 sits awaiting an engine change at an airstrip in the area of Federowka during the mid-winter of 1941-42. It is of interest to note that while one BMW engine is slung beneath a tripod hoist, a second sits on a small sled – a most practical method of transporting engines over a short distance in the prevailing weather conditions.



A Henschel Hs 126 of the 4.(H)/13 awaiting recovery after suffering an undercarriage mishap on the Eastern Front during the spring of 1942.



A Messerschmitt Bf 109 G-6 or G-8, 5F+ 'Yellow 5' of NAG 14 seen at St. Malo during the summer of 1944. In common with their Allied opponents, pilots of single-engined Luftwaffe fighters frequently had a member of the ground crew sit on a wing to guide the pilot while taxiing his machine.

A well-known photograph of Messerschmitt Bf 109 G-10/R2, 5F+12 of the 2./NAGr. 14, seen parked outside a hangar at Fürth, Germany, to where it was flown by its pilot to surrender to US forces in early May 1945. The second view below shows the aircraft as the centre of attention for curious US servicemen.



A Focke-Wulf Fw 189 A-2 of the 11.(H)/12 displays its distinctive silhouette as it comes in to land at an unknown location on the Eastern Front in mid-1943. Reformed from the 1.(H)/12 in April 1943, the newly redesignated Staffel served under the Stab/NAGr. 15 from May 1943 until June 1944 and then under the Stab/NAGr. 8 during July and August 1944. It was disbanded at Praust in north-west Poland in March 1945.



### **Stab/NAGr. 15**

Formed in Central Russia from Gruppenfliegerstab 32 with a Stab, Stabs-Kompanie and Ln.Betr.Komp.(mot.). The Stabs-Kompanie was disbanded in February 1945. Its assigned Staffeln in May 1942 were the 1.(H)/12, the 2.(H)/13 and the 6.(H)/32.

Wearing a worn temporary white winter camouflage finish over its 70/71 camouflaged upper surfaces, 4E+OK, a Focke-Wulf Fw 189 A-1 of the 12.(H)/13, undergoes post-sortie servicing at Orel-West during March 1943. Reformed from the 2.(H)/13 in October 1942, it remained with NAGr. 15 until August 1943 when it transferred to the control of the Stab/NAGr. 10 until May 1944. In June 1944, it transferred to the control of the Stab/NAGr. 4 but returned to Stab/NAGr. 15 the following month.



Above and right: Almost devoid of its temporary white winter finish, Focke-Wulf Fw 189 A-1, 4E+MK of the 12.(H)/13 is seen here (above and right) being prepared for a sortie from either Ulyanovo or Orel-West in the winter of 1942-43. Often required to operate at dusk or night, many of the aircraft of the Staffel were, as seen here, given a temporary black finish over the 65 coloured under surfaces.



Left: Luftwaffe personnel at an unidentified airfield on the Eastern Front inspect a badly damaged Focke-Wulf Fw 189 A-1, 4E+TK of the 12.(H)/13 in late 1943. Although fitted with the standard upper dorsal armament of the A-1, the tail position is fitted with the later MG 81Z installation of the A-2, and the unit code letters of 4E, although barely visible, have been applied in accordance with the change ordered in mid-1943.



Left: A mechanic is seen here servicing Focke-Wulf Fw 189 A-2, H1+AN of the 5.(H)/12, in the area of Gomel-Süd on the Eastern Front during the summer of 1942. Visible on the engine cowling is the Staffel emblem of a dark-skinned Arabian boy wearing a red suit and fez holding on to a yellow rope while raising a dark-coloured flute to his mouth. Formed at Münster-Loddensen in 1940, by May 1942 the Staffel was operating under NAGr. 16 within Generaloberst von Richthofen's Luftflotte 4 where it remained until March 1943, when it was redesignated as the 2./NAGr. 2.

### Stab/NAGr. 16

Formed in South Russia under Major Johannes Sieckenius from Gruppenfliegerstab 11 with a Stab, Stabskompanie and Ln.Betr.Komp. (mot.). It was disbanded in February 1943 after suffering

heavy losses at Stalingrad. In May 1942, its assigned *Staffeln* were the 3.(H) and 5.(H)/12.

On 15 February 1943, the short-range *Gruppen* were joined by the short-lived operational training unit *Nahaufklärungsgeschwader*<sup>4</sup> 102, which, with a Stab and two *Gruppen* was formed at Jüterbog-Damm from the *Nahaufklärungsschule* 2 (H)<sup>5</sup> and placed under the command of *Obstlt.* Günther Börner. In existence for barely more than a year, 28 August 1944 saw the I. Gruppe redesignated as JG 117 and on 5 December 1944, the *Gruppenstab* re-formed as the *Stab/Aufklärungsgeschwader*

Staffel personnel of the 2.(H)/14 are seen here fitting the engine cover to Henschel Hs 126 B-1, 5F+FK to protect it against the rigours of the North African climate. Finished in an undetermined sand coloured upper camouflage, it carries a white fuselage theatre band around the tail with the individual aircraft letter applied in black beneath each wing outboard of the Balkenkreuz.



Snow, ice or dust were all the same to the Aufklärungsgesler. Seen here, 5F+CK, a Henschel Hs 126 B-1 of the 2.(H)/14 stirs up a miniature sandstorm after returning from a sortie in North Africa during early 1942. After arriving in North Africa in early 1941, the 2.(H)/14 initially operated under the command of Fliegerführer Afrika within the X. Fliegerkorps; it was redesignated as the 1./NAGr. 11 on 1 November 1943.



103 and the II. Gruppe re-formed as the II./Aufklärungsgeschwader 103.

Even with this reorganisation, many of the short-range Staffeln assigned to the Nahauflärungsgruppen retained their original (H) designations for a considerable period of time, some continuing to do so until very late in the war, and in some cases, until the cessation of hostilities. One such example was the arrival of the NAGr. 11 in Northern Italy during late 1943. In October of that year, two short-range reconnaissance Staffeln, the 2.(H)/14 and 4.(H)/12, already active in the theatre, were incorporated into the newly arrived NAGr. 11 but retained their old designations until 1 November 1943 when they became the 1. and 2./NAGr. 11 respectively.

Additionally, at various times during their operational lives, several short-range Gruppen made frequent use of a name rather than their assigned unit designation. Some examples of these are as follows; formed from the *Ergänzungsgruppe*<sup>6</sup>/NAGr. Bromberg in November 1942, NAGr. Bromberg retained this name until being absorbed into the *Ergänzung Aufklärungsgeschwader* 1 in January 1945 *Nahauflärungsstaffel* (NASta.) Kroatien<sup>7</sup> formed around a cadre of Croatian airmen at Agram in April 1943 and retained its name throughout its service life until its disbandment in 1945. NAGr. Fleischmann, formed during December 1942 and believed named for Major Werner Fleischmann of NAGr. 12, was absorbed into the *Stab* of that Gruppe the following January while NAGr. Sell was the informal name given to the NAGr. 5 while under the command of Major Wilhelm Sell between 1943 and 1944.

Suitably attired for the North African climate, the crew of an Hs 126 of the 2.(H)/14 are shown posing in front of their aircraft, which appears to be wearing a sand coloured motte over its more usual 70/71 upper surface camouflage. The Staffel emblem of a white Edelweiss superimposed on a blue or red shield may be seen on the fuselage side.



Commonwealth troops are seen here examining Messerschmitt Bf 109 G-2/trop Black 14, W.Nr. 10605 of the 2.(H)/14 near Zarzis, Tunisia, in February 1943. Damaged by British ground fire during an imaging sortie on 20 February, the pilot, Lt. Wernicke, made an excellent forced-landing and made good his escape to German lines. The name 'Irmgard' on the fuselage side beneath the windscreen was that of the girlfriend of the ground crew chief, Uffz. Bopp. Note the two tear drop shapes to the right of the name; these are mounts for an umbrella to shade the cockpit.



These two views show a wrecked Messerschmitt Bf 109 G-8 of NAGr. Bromberg (redesignated as the Ergänzungsaufklärungsgeschwader 1 in January 1945) found at Bayreuth-Bindlach by US forces in May 1945. Believed to have been finished in the standard 74/75/76 camouflage for day fighters, the markings carried on this aircraft are quite interesting, consisting of a white-outlined 'red 4', the code of NS+DK and a broad white 'spirlschnauze' on the spinner. The small figure '2' visible below and aft of the swastika on the fin is a part of the aircraft's Werk Nummer.



Similarly, the Messerschmitt Me 262-equipped Kommando Brauneck<sup>8</sup> made frequent use of the name Kommando Panther on the basis that the sleek lines of the aircraft reminded its Kommandeur<sup>9</sup>, Oblt. Herward Brauneck, of a panther in the wild. Formed at Lechfeld in June 1944, it received its first camera-equipped Me 262 A-1a/U3 on 26 August and was placed under the overall control of the Versuchsverband OKL<sup>10</sup>. Later operating a mix of Me 262 A-1as and camera-equipped Me 262 A-1a/U3s, the Kommando was frequently referred to operationally in signals and transmissions as Kommando Panther even after being incorporated into the 2./NAGr. 6 on 30 January 1945.

1. Group Flying Staff
2. Staff/headquarters company
3. Motorised Air Signals company
4. Close Reconnaissance Wing 102
5. Close Reconnaissance School 2(H)
6. Reserve/replacement training Group
7. Short-range squadron Croatia
8. Detachment Brauneck
9. Commander
10. Experimental detachment of the Luftwaffe High Command



Born in Graz in 1917, Herward Brauneck joined the Austrian Air Force on 30 September 1937 and, following its incorporation into the Luftwaffe in early 1938, he became a student at the Luftkriegsschule at Berlin-Gatow.

Following training at various reconnaissance schools, he was posted to 1.(H)/41 on 10 December 1939, and in June 1942, to 4.(H)/41. He later served with NAGr. 9 as Technical Officer and as a Staffelkapitän flying Bf 109s and Fw 190s. He was awarded the Ritterkreuz on 26 March 1944, and in June that year, given the task of forming the experimental jet reconnaissance unit known as Kommando Brauneck - later 2./NAGr. 6.



Left and below: On 1 January 1945, Herward Brauneck was taking off in Messerschmitt Me 262 A-1a/U3, W.Nr. 170111 of his Kommando from Schwäbisch-Hall when its port engine failed leaving him with little option to force-land his crippled aircraft, during which the nose undercarriage leg was broken off. In the accompanying photos, the aircraft, which was recorded as suffering no more than 5 per cent damage, is seen immediately prior to its recovery. Fitted with a blast tube for the intended single MK 108 cannon installation, the aircraft wore an overall finish of either 65 or 76 with a random pattern of 70 and 71 applied in varying strengths over the upper surfaces of the wings, fuselage and forward engine nacelles. This aircraft later became 'White 26' (below) in the 2./NAGr. 6 as shown in the second photograph.



Above right and right: Although some uncertainty still surrounds the identity and unit affiliation of this well-known Messerschmitt Me 262 A-1a/U3 'White 3', recent research now suggests that, although the W.Nr. is not clearly visible in the original film, the two most likely candidates are either 500537 or 500473. Apparently finished with a single dark upper colour, close examination of the original film shows distinct segments in the dark colour of the fuselage, suggesting the possibility of a finish such as 81/83 or similar dark green combination. Fitted with a blast tube for the proposed single MK 108 installation, the access door blister fairings covering the film magazines of the paired Rb 50/30 cameras are of a different cross section and shorter than those seen on other Me 262 A-1a/U3 aircraft in that they do not extend beyond the forward edge of the doors.



1942-1945



The mainstay and true maid-of-all-work of the Luftwaffe's weather and long-range reconnaissance Staffeln was the Junkers Ju 88. This example, Ju 88 D-1, D+LH, of the Westa 1/ObdL, was photographed at Bad Zwischenahn in the summer of 1942. Finished in the standard bomber camouflage scheme of 70/71/65, a sparse mottle of 02 or similar pale grey has been applied over the upper surface camouflage to aid in concealing the aircraft for over-water flights. It carried the unit emblem of a rainbow over an island in the sea on both sides of the nose. Clearly visible beneath the nose are the external section of the Meteorograph and pitot. This aircraft failed to return from an operational sortie over the North Sea on 10 November 1942 with Staffelkapitän Kurt Jonas and crew listed as missing.

## The Fernaufklärungsgruppen

**P**re-dated by the establishment of the *Ergänzungs-Fernaufklärungsgruppe*<sup>1</sup> at Weimar-Nohra in April 1942, between May of that year and August 1944, five *Fernaufklärungsgruppen* were established. Of the five, four comprised a permanent Stab to which individual (F) Staffeln, including on occasion a night reconnaissance Staffel, were assigned as operationally required while the fifth consisted of both a permanent Stab and permanently assigned Staffeln. The five *Fernaufklärungsgruppen* were:

### **Stab/FAGr. 1**

Formed under the command of *Obstlt.* Helmut Höppener in May 1942 at Luga in the Leningrad region of north-western Russia. The Staffeln initially assigned to the Stab in May 1942 were the 3.(F)/22, 5.(F)/122 and 3.(F)/ObdL.



Below left: Winter camouflaged early model Junkers Ju 88 D-1, F6+TN of the 5.(F)/122 is seen here having protective covers fitted to the cockpit canopy and engines at an airstrip in the region of Gostkinno in the winter of 1942. The small fairing on the top starboard side of the fuselage immediately above the Balkenkreuz is the exhaust vent for the petrol-fired heater for the camera compartment. Interestingly, it is fitted with the early style rudder used by A-5 and early A-4 airframes; the hinged rear section of the ventral crew position appears to be of the B12 type frequently fitted to later models of the Ju 88 A-5 and the FuB L2 under-fuselage antenna has been moved aft to clear the camera bay.

An unidentified and winter camouflaged early model Junkers Ju 88 D-1 of the 5.(F)/122 undergoes servicing under weak winter sunlight at Gossokino during the winter of 1942. Clearly visible in the view are the fuselage-mounted exhaust for the camera bay heater and the later bulged rear cockpit canopy with its two defensive gun positions.



Winter camouflaged early model Junkers Ju 88 D-1, F6+DN of the 5.(F)/122 photographed at Gossokino in 1943. Unlike many of the other D-1 aircraft of the Staffel, the yellow theatre band was of a narrower width and placed further aft on the fuselage.

An early Junkers Ju 88 D-1 of the 5.(F)/122, F6+ON seen at Gossokino in the early spring of 1943. As with many other Ju 88s of the Staffel, the tips of the spinners and individual aircraft letter are painted in the Staffel colour of red, with the latter having a narrow white outline. The early D-1 models used by the Staffel also showed a relatively consistent width and location for their yellow fuselage theatre bands.

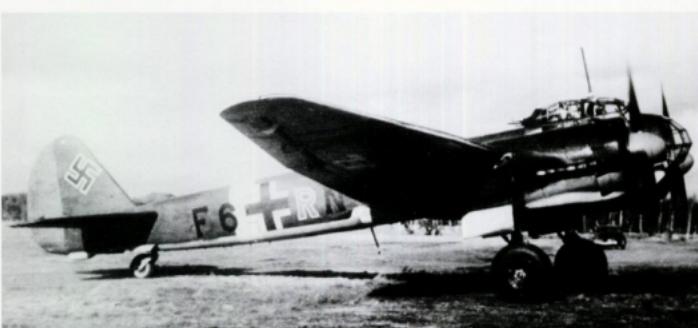


1942-1945

Wearing a well-worn temporary white winter camouflage over its regular green upper surface camouflage, Junkers Ju 88 D-1, 4N+NL of the 3.(F)22 gets the signal for take-off on a bright winter's day from an airstrip on the Eastern Front in 1943.



In the head-on view of a Junkers Ju 88 D-2 of the 4.(F)11, the three flush-mounted camera windows are clearly visible in the rear lower fuselage, and as with many reconnaissance Ju 88s, it is fitted with the under-wing ETC carriers for the carriage of external drop tanks to increase its operating range.



Yet another early Junkers Ju 88 D-1 of the 5.(F)122, F6+RN was photographed at Gostkino in the early summer of 1943. Fitted with the early style rudder, it has the tips of the spinners painted in the Staffel colour of red, as is the aircraft letter, which has a narrow white outline.

### **Stab/FAGr. 2**

Formed at Smolensk, Russia in May 1942 from the Gruppenfliegerstab 23, its initially assigned Staffeln at this time were the 4.(F)/11, 4.(F)/14 and 1.(F)/ObdL.

### **Stab/FAGr. 3**

Formed at Stubendorf near Vienna under the command of a Major Fieher on 20 August 1944, the Staffeln known to have been assigned between its formation and its disbandment in May 1945 were the 4./Aufkl/Gr.Nacht, 2.(F)/22, 2.(F)/100 and the 4.(F)/121.

### **Stab/FAGr. 4**

Formed under the command of Major Friedrich Alpers in May 1942 at Nikolayev in the southern Ukraine from Gruppenfliegerstab 12, its initially assigned Staffeln in May 1942 were the 3.(F)/10, 2.(F)/22 and 2.(F)/ObdL. The Stab was disbanded in April 1945.

### **Stab/FAGr. 5**

Formed under the command of Hptm, Hermann Fischer in June 1943 at Mont-de-Marsan, in the département of Landes in southern France, the Stab was disbanded in February 1945. Of its permanently assigned elements, the 1. Staffel was formed in June 1943 from the 3.(F)/Aufkl/Gr.10, while also in June 1943, the 2. Staffel was formed from the 3.(F)/Aufkl/Gr.100. In February 1945, these Staffeln were redesignated as the 1. and 2./FAGr. 1 respectively. Formed at Nantes from the Horch- und Störstaffel 2<sup>2</sup> on 13 May 1944, the 4. Staffel existed for barely two months before its disbandment in July. In addition to the disbandment of the Stab in February 1945,

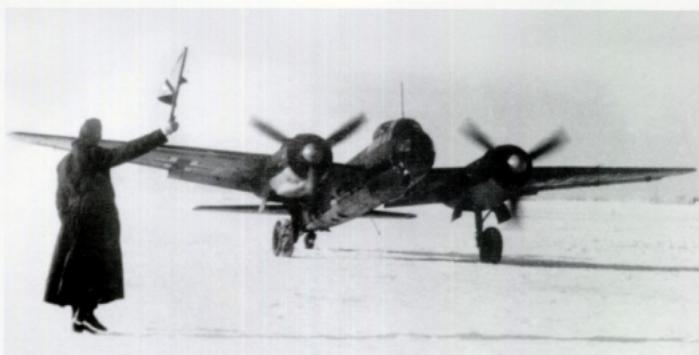




A Junkers Ju 88 D-1 of the 4.(F)/14 gets the signal to take off from a frozen airstrip in the area of Smolensk-Nord during the winter of 1943. The camera windows are just visible beneath the lower section of the rear fuselage.



Junkers Ju 88 D-1, 5F+DM of the 4.(F)/14 at Dugino on the Eastern Front in the summer of 1942. It carries a yellow theatre band immediately aft of the fuselage Balkenkreuz and its worn and faded 70/71 upper surface camouflage gives the appearance of a single colour.



An early Junkers Ju 88 D-1, 4N+BK of the 2.(F)/22 at an airstrip in the area of Poltava in the early winter of 1942. Finished in a standard 70/71/65 camouflage, the lower surfaces of the wing tips are painted in the theatre colour of yellow while the theatre band around the rear fuselage is much narrower than was usually seen on Ju 88s.

the same month also saw the creation of the fourth element of FAGr. 5 with the formation of the *Einsatzkommando 1./FAGr. 5*<sup>3</sup> which remained as such until it was redesignated as the *Einsatzkommando 1./FAGr. 1* in May 1945.

In addition to the five *Gruppen* listed here, the period between June 1941 and August 1943 saw the establishment of an additional four long-range night *Staffeln*, two independent long-range *Staffeln* and an operational long-range training *Geschwader*.

Formed in Russia between June 1941 and August 1942 and operating primarily on the Eastern Front, the results obtained from the night photographic sorties carried out by the 1., 2., 3. and 4.



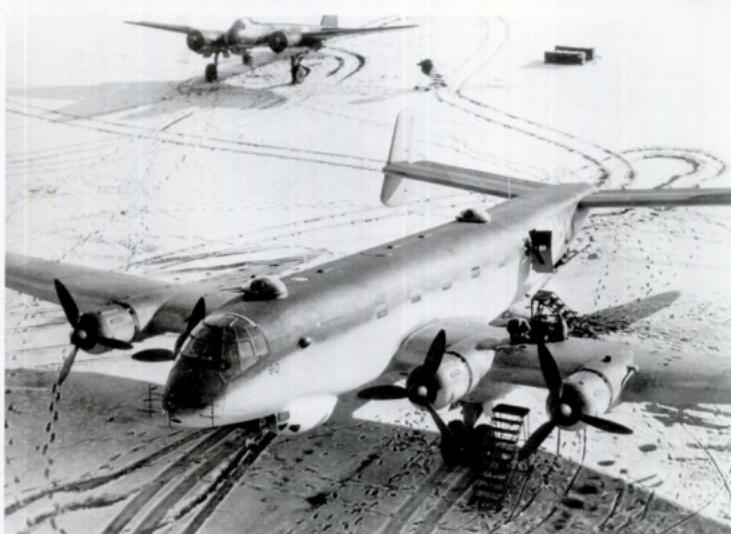
Two views of what is believed to be Junkers Ju 86 P of the 2.(F)/ObdL, T5+RK, which carried out high-altitude flights over the British Isles from its base at Oranienburg near Berlin during 1940; in the second view, an unidentified member of the Staffel is seen holding the circular crew hatch for the pressurised crew cabin.



#### Junkers Ju 86 P, coded T5+RK, of 2.(F)/ObdL

The aircraft is finished in an upper splinter pattern of the greens 70 and 71 with 65 blue under surfaces. It carried the standard Balkenkreuze on the tops of the wings and fuselage sides but, in view of its high-altitude usage, it carried none beneath the wings so as not to compromise the pale blue under surfaces. As with other Luftwaffe aircraft, a Swastika was carried on the outer surface of each fin and the Staffel codes were applied in black to each side of the fuselage.

Junkers Ju 290 A-5,  
9V-BH, W.Nr.  
29010172 of the  
1./FAGr. 5 at its base at  
Mont de Marsan,  
France, in mid-1944.  
Entering Luftwaffe  
service in December  
1943, it sustained 20  
per cent damage in a  
crash-landing at  
Bernburg on 18 August  
1944.



An overhead view of  
Junkers Ju 290 A,  
W.Nr. 0180 taken at the  
Junkers Dessau plant.  
Wearing the  
Stammkennzeichen of  
KR+LK, it later became  
9K+VH of FAGr. 5 and  
was destroyed on the  
ground at Rechlin on  
10 April 1945.



Junkers Ju 290 A-3,  
9V+DK of the 2./FAGr. 5  
photographed over  
southern France in  
1943. It was lost in a  
crash in Spain on  
26 December 1943.

1942-1945



Possibly taken at Witebsk, Russia, in the late summer of 1941, these two undated views show Bildstelle personnel preparing to install three Rb type cameras into Junkers Ju 88 D-2, F6+IK.



Aufklärungsstaffeln (F)/Nacht provided a significant contribution in the coverage of areas where, because of high levels of enemy activity, day photography was either difficult or impossible to carry out. Although there is evidence to suggest that the 3. Staffel was disbanded in Brieg in December 1944, the remaining three Staffeln continued operating from bases in Denmark and north-central Germany until the closing weeks of the war.

First formed at Reval-Laksberg (Lasnamäe), Estonia in October 1942 and equipped with a mixture of Junkers Ju 88 A and Focke-Wulf Fw 189 aircraft, the Aufklärungsstaffel (F) Ostsee<sup>4</sup> remained in service for a mere nine months before it was disbanded in June 1943.

Established on 15 February 1943 under the command of Oberst. Roman Schneider, the Fernaufklärungsgeschwader 101 comprised a Geschwaderstab (based at Perleberg) and two Gruppen, each consisting of a Gruppenstab and two Staffeln formed at Grossenhain on the same date from the Aufklärungsfliegerschule 1(F), and 3(F) respectively. Equipped with a variety of aircraft types ranging from the Arado Ar 96 to the Junkers Ju 188 and Messerschmitt Me 410, the Geschwader remained operational until 5 December 1944 when the Stab and I. Gruppe were disbanded and the II. Gruppe re-formed as the short-lived I./Aufklärungsgeschwader 103.

Closely associated with Aufklärungsgruppe 11, Küstenstaffel (F) Krim<sup>5</sup>, the second independent long-range Staffel, was formed at Bagerowo on the Crimean Peninsula in August 1943 and two months later absorbed the II./Kampffliegerschule Tutow (KFS 1). In operational existence for just under a year, the Staffel was disbanded on 18 July 1944 but was re-formed at Gossen on the same date as the 12./ZG 26.

By the winter of 1942, no Luftwaffe units remained under the tactical control of the Army; the short-range reconnaissance Staffeln was now to cooperate with the various army command headquarters in the same manner as other flying units assigned by the *Luftflotte* or its subordinate commands<sup>6</sup>. The mission of tactical and battle reconnaissance for the Army, including those for both the artillery and the infantry, was assigned to the Nahaufklärungsgruppen by their controlling *Luftwaffe* command which designated the Staffeln to be assigned to a specific army command. Furthermore, and additional to these requirements, these Staffeln had to assume responsibility for the tactical missions required by the relevant *Fliegerkorps*, *Fliegerdivision* or *Fliegerführer*.

An undated photo of Staffel personnel decorating a Junkers Ju 88 D-1 of the 1.(F)/33 to celebrate the completion of the 500th wartime sortie. Operating procedures within the Luftwaffe meant that it was common for aircrew to complete hundreds of operational missions. Essentially, Luftwaffe aircrews flew until they were killed, wounded or promoted out of the job. Ultimately, those who survived became very proficient.





*Staffel personnel of the 1.(F)/22 pose in front of a Junkers Ju 88 D-2 shortly before the onset of Operation Marita in April 1941. Visible on the nose of the aircraft is the Staffel emblem of the coat of arms of Kassel with a superimposed 'Puss in Boots' figure. The spinners are painted in the Staffel colour of white, and while the cowlings appear to be of a similar colour, they are in fact temporarily painted in yellow for the forthcoming operation in which a part of the Staffel was assigned to the Kolult 12. Armee. The Staffel later took part in Operation Barbarossa under the Kolult Heeresgruppe Nord and would later move to Väernes, Norway, from where it was subordinated to the Fliegerführer Nord (West).*

With the *Luftwaffe* now exercising complete control of aerial reconnaissance operations, liaison became the responsibility of the *Flivo* and the *Ic/Lw*.<sup>7</sup> Each liaison staff was composed of a small group of *Luftwaffe* personnel from the *Fliegertruppe* generally headed by a field-grade officer known by the abbreviation of *Flivo*, whose title gave these groups their name, and who usually held the rank of *Oberst* when assigned to an *Armee Gruppe*, *Armee*, or *Panzer Armee*. The *Flivo* and his small liaison staff commanded no units, but rather served as intermediaries between the army commands and the *Luftwaffe*, prepared situation reports and forwarded the army's requests for reconnaissance missions.

Prior to May 1942, army reconnaissance requests were sent to the relevant *Kolult* who, in turn, would issue the operational order for the sortie to the *Staffel* selected for the task. After this date, these requests were sent via the *Flivo* to the appropriate *Luftwaffe* command, which then assigned the sortie to one of its subordinate *Staffeln*. Issued as written directives, in an emergency a request could be made by telephone or, under certain circumstances, by radio. In preparation for a mission, a detailed examination was made of all known facts about the area to be reconnoitred. This included information about both enemy and friendly forces, weather and flight route data, code words, message dropping points and operational techniques. If during a sortie important information came to hand, it would either be transmitted by radio or dropped as a written message at a pre-selected dropping point. Following a sortie, the pilot or, in the case of multi-seat aircraft, the observer, completed a mission report, which was then forwarded by the *Flivo* or *Ic/Lw* to the requesting authority. A similar report was sent to the *Fliegerkorps* and statistical reports sent to the office of the *General der Aufklärungsflieger* at Jüterbog to the south of Berlin.

#### The Roles of the *Kolult*, *Flivo* and *Ic/Lw*

*Kommandeur der Luftwaffe bei einem Armeoberkommando* was the title given to *Luftwaffe* Commanders attached to *Heeresgruppen* (Army Groups) or, *Luftwaffe* Commanders, *Armeoberkommando*<sup>8</sup> as they were called if independent, were, whenever possible, General Staff Officers known by the abbreviation *Kolult*. A *Kolult* acted as an advisor for all matters concerning *Luftwaffe* units and was in overall command of all attached *Luftwaffe* elements.

In this capacity, he was responsible to the *Chef der Generalstab*; his duty was to present recommendations for both the assignment and employment of all available *Luftwaffe* units to subordinate headquarters within an area of operations.

The responsibilities of a *Kolult* were as follows:

- Keeping the headquarters command of an *Armee* or *Heeresgruppe* informed of the results of all reconnaissance operations.
- The drafting of operational orders to subordinate flying units, flak units and civilian air defence agencies within the area. In keeping with the operational planning of the *Oberbefehlshaber*, would take the necessary action to expand and equip ground organisation installations available to the assigned *Luftwaffe* units and maintain liaison with the local *Luftgau* headquarters.
- Making of recommendations for the planning and establishment of communications facilities to the signals officer of the relevant *Armee* or *Heeresgruppe*.
- Maintaining contact with neighbouring *Luftwaffe* headquarters and acquainting them with the air situation for his area and obtain information concerning their operational plans for transmission to the appropriate *Armee* or *Heeresgruppe*.
- When attached to an *Armee*, a *Kolult* was also responsible for coordinating the administration of supply activities for *Luftwaffe* elements operating within that army's operational area with the local *Luftgau* and quartermaster branch of the army.

**Responsibilities of the *Fliegerverbindungsoffizier, Ic/Lw* and Chief of Signal Communications Services**

The following examples outlining the responsibilities of the *Flivo*, *Ic/Lw* and the Chief of Signals Communications Services were obtained from a translation of a German document entitled: *Oberkommando der Heeresgruppe E°, Arbeitsteilung, Stand 1, Dezember 1943, la No. 35756/43geh.*, 7.12.43.

Attached *Flivo*: Oberst Ernst Mundt

Deputy: Hauptmann Dr. Wolf

Responsible for:

- Liaison between *Heeresgruppe E* and *Luftwaffenkommando Süd-Ost* (*Lw.Kdo.Süd-Ost*).
- Briefing the headquarters of *Heeresgruppe E* on the air situation, operational intentions and order of battle of *Luftwaffe* formations.
- Conveying the wishes of the army to *Lw.Kdo. Süd-Ost* regarding *Luftwaffe* operations and air transport.
- Briefing *Lw.Kdo. Süd-Ost* regarding the ground situation, operational intentions and the order of battle of army formations.
- Employment of the aircraft of the *Kurierstaffel* (Courier squadron) attached to the headquarters of *Heeresgruppe E*.
- Cooperation and coordination with the Quartermaster branch of *Heeresgruppe E*.

Subordinate to the *Flivo* are:

a) *Ic/Lw* (only administratively) *Oberleutnant* Blendel

Responsible for:

- Compilation of the air situation report on enemy air activity and evaluation of the aerial reconnaissance reports.
- Compilation of the naval situation report based on the results obtained from the aerial reconnaissance units.
- Forwarding of reconnaissance wishes to the *Luftwaffe*.
- b) Chief of Signal Communications Services.

Responsible for:

- The monitoring of all information of interest on radio and signals traffic.

Interestingly, on the same date, *Heeresgruppe F* with its headquarters in Belgrade had exactly the same organisational setup.

Furthermore, *Heeresgruppe F* also acted as the *Oberbefehlshaber Süd-Ost* (C in C South East) with command over all *Wehrmacht* forces in the Balkan theatre that included Yugoslavia, Greece, Bulgaria, Albania and the entire Aegean. As a further point of interest, as 2. *Panzerarmee* had no attached *Flivo* or *Ic/Lw* officer, *Heeresgruppe F* handled this instead. The following information on attached *Luftwaffe* liaison personnel for *Heeresgruppe F* for December 1943 is taken from *Heeresgruppe F Akte 65605/2 'Ic/A.O., Anlagen z.Tätigkeitsbericht d. OB Süd-Ost'*:

Attached *Flivo*: Oberst Fritz Lampe

Deputy: Post vacant at present

Responsibilities:

The same as those shown for *Heeresgruppe E*.

*Ic/Lw*: Oberleutnant Sauer

Deputy: Leutnant Gruss

Responsible for:

- Appraising the enemy air situation, the compilation of aerial reconnaissance data, the maritime situation as based on the evaluation of aerial imagery and the requesting of reconnaissance sorties from the various *Staffeln*.

The crew of a Junkers Ju 88 D-1 of the 1.(F)/122 photographed in front of their aircraft shortly after arriving at Gerbini, Sicily, in December 1941. The Staffel would operate under the II. Fliegerkorps until subordinated to Fliegerführer Afrika on 10 January 1942, but would return to Gerbini in February.



Identified as having been taken while the Staffel was operating under the Fliegerführer Nordnorwegen, this undated photograph of a force-landed Junkers Ju 88 D-2 of the Kirkenes-based 1.(F)/124 clearly shows the Staffel emblem of a white bordered, dark coloured shield containing an image of the Eiffel Tower over which is superimposed a white eagle. The white-painted forward sections of the spinners appear to have had a light mottle of a dark colour applied to tone down their appearance.



Junkers Ju 88 D-1, F6+BL of the 3.(F)/122 is seen being prepared for a sortie from Creil in the Picardy region of northern France during the late spring of 1942 while operating under the IX. Fliegerkorps within Luftflotte 3. The aircraft is finished in a standard scheme of 70/71/65 with the letter 'B' in the Staffel colour of yellow.

Although by no means a perfect solution to the liaison problems evidenced during early Wehrmacht operations, the newly restructured system did provide a number of advantages over its predecessor, especially in relation to cooperation between the Luftwaffe and the Army at a tactical level.

- In most cases, it prevented the duplication of effort, most notably at a strategic level, which had resulted from Luftwaffe reconnaissance units and those attached to the various Army commands operating in the same areas.
- The discontinuation of a divided command authority, namely, the tactical command authority by the Army and disciplinary and administrative control by the Luftwaffe force created clearly established chains of command.
- It provided for a more uniform use of air power than had been the case when units were under Army control.
- The creation and assignment of the new Gruppen under higher levels of Luftwaffe command, which were usually closer than a controlling army headquarters allowed for more appropriate service supervision.
- The complete integration of the units ensured an improved level of replacement services in respect of aircraft, personnel and fuel supplies.



This close-up view of the nose of a Dornier Do 17 P shows the emblem of the Aufklärungskette Lappland which consisted of a red sun setting over a blue sea contained within a stylised cross similar in appearance to a Balkenkreuz. The Kette was absorbed into the 1.(F)/124 in January 1943.

- The consolidation of the individual reconnaissance *Staffeln* under a *Gruppe* headquarters reduced the size of the ground support organisation while the use of one airfield by all *Staffeln* of a *Gruppe* provided for a more economical use of personnel and servicing equipment.

Even so and despite the improvements made, the new system presented some serious disadvantages.

- The reduction in the number of tactical *Staffeln* often prevented the assignment of one *Staffel* to support each infantry corps or armoured division and resulted in many of the *Staffeln* having to assume the responsibility for the aerial reconnaissance for a number of army headquarters.
- A *Staffel* supporting an army command was no longer able to use an airfield close to its supported army command but would normally be required to operate from the airfield used by the *Gruppe*, which was often situated further away. This, and the circumstances described above, often created an adverse effect on the close contact that had previously existed between each *Staffel* and the army command it was supporting and frequently complicated the assignment of missions and the process of reporting the mission results.

In the case of strategic reconnaissance, it was found that under the new system where aerial reconnaissance activities for the Army and Luftwaffe were combined, the reorganisation did not lead to any appreciable savings in forces. In reconnaissance for the Army, the *Staffeln* engaged on these missions were required to observe road and rail routes, enemy rear areas and support lines for as far as the operating range of the aircraft permitted, thus having to report on their observations which were made along more or less straight lines.

On the other hand, strategic reconnaissance missions for the Luftwaffe were directed at individual points, some of which were at a considerable distance from each other such as airfields, industrial installations, harbours, enemy reserve forces, etc. Generally, this required that the aircraft of the *Staffeln* engaged on these missions had to fly crossover routes from one point to the other. Thus, and in view of the difference in the mission requirements for the Army and the Luftwaffe, it often remained necessary to provide a separate aircraft for each mission.

As originally intended by this reorganisation, an entire *Gruppe* would occupy one airfield where its *Gruppenkommandeur* would become to all intents and purposes, the airfield commander. However, this arrangement did not remain in effect for very long and it became relatively normal to see one or two *Staffeln* based at the same airfield as the *Gruppenstab* with the remainder locating themselves closer to their assigned areas of operations. The *Gruppen* to which the various strategic and tactical *Staffeln* were assigned were quite flexible, and provided a much-needed operational requirement within a *Luftflotte* and its subordinate air commands and remained so throughout the remainder of the war, even though their assigned *Staffeln* transferred frequently between other *Gruppen* and commands as dictated by the prevailing military situation.



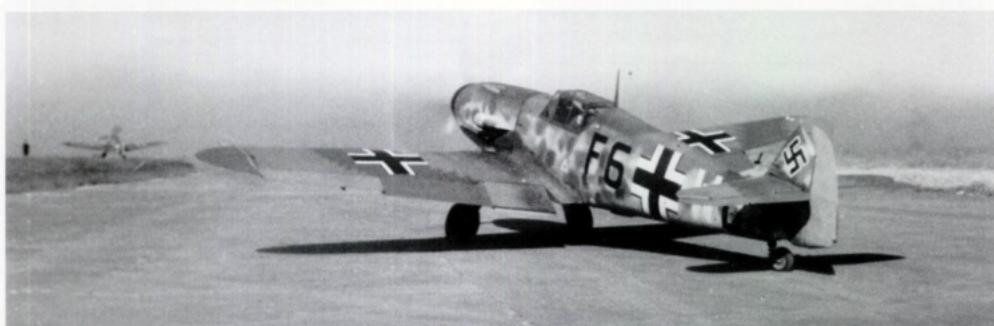
Taken on 12 July 1942, this view shows a Junkers Ju 88 D-2 of the 3.(Fl)/33 being refuelled at Paris-Orly shortly before it left with its crew on a short detachment to the 3.(Fl)/122. Clearly visible on the nose of the aircraft is the Staffel emblem of a black 'Sieggrune' (Victory rune) superimposed on a black-bordered white disc. Designed by pilot Lt. Günther Röwert, it was often referred to by crews as the 'Knochen' or 'bone'.

1. Long-range reconnaissance reserve/replacement training group
2. Radio intercept and jamming Squadron 2
3. Operational Combat Detachment 1 of Long-range Reconnaissance Group 1
4. Renamed Aufklärungsstaffel Reval for the period May – June 1943
5. Long-range coastal squadron Crimea
6. Fliegerkorps, Fliegerdivision or Fliegerführer
7. Intelligence Officer, Luftwaffe. Intelligence officers attached to the intelligence sections of army commands responsible for transmitting the requests of these headquarters to their supporting *Luftflotte* or *Fliegerkorps*
8. Army headquarters command – abbr. AOK
9. Heeresgruppe E headquartered in Salonika was in direct command of the 280,000 troops in Greece, Crete, Rhodes and the remainder of the Aegean area. There was no numbered Army in Greece – Heeresgruppe E filled that role

Believed to have been taken at Toussus-le-Buc in the spring of 1942, Staffel Bildstelle personnel are seen preparing Messerschmitt Bf 109 F-4/R3, Wk-Nr. 109+TL of the 1.(F)/123 in readiness for a sortie. Interestingly, the aircraft lacks an antenna mast suggesting that the radio equipment may have been removed. A rear-view mirror is fitted to the windscreen framing and the white segments of the fuselage Balkenkreuz have been subdued.



Two Messerschmitt Bf 109 F-4/R3s of the 1.(F)/122 at Catania, Sicily, during the summer of 1942 where ground crew have placed sun umbrellas over their open cockpits to make them cooler and more comfortable for their pilots. Both aircraft carry the Staffel emblem of a stylised white stork flying across a red and white symbol representing the field of view of a camera.

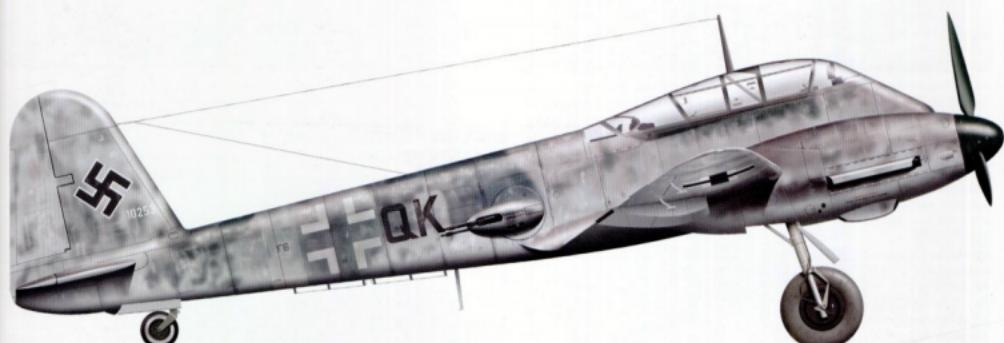


A pair of Messerschmitt Bf 109 F-4/R3s of the 1.(F)/122 seen taxiing out prior to a sortie from Catania, Sicily, in the summer of 1942, the fairing for the Rb type cameras being clearly visible beneath the lower fuselage of F6+WL. Devoid of a Staffel emblem, it is not known why the aircraft carried the letter L as the last letter of the code (usually associated with a 3.Staffel) instead of the more usual 1. Staffel letter of H.

1942-1945



On 26 November 1943, Messerschmitt Me 410, F6+QK, W.Nr. 10253 of 2.(F)/122, was carrying out a reconnaissance sortie of the area around Foggia, Bari, Termoli, when it was attacked by Allied fighters. Leaving pilot, Ohw. Arthur Kammerberger, little option other than to force-land his crippled aircraft on the banks of the Sangro River where he and second crewmember, Uffz. Vitus Mirbach, were made prisoners of war.



#### **Messerschmitt Me 410, W.Nr. 10253, code F6+QK of 2.(F)/122**

The aircraft wore the standard day fighter upper surface camouflage of the two greys 74 and 75 with under surfaces in 76 with a variable mottling of the two upper colours applied to the sides of the fuselage and fin/rudder assembly. The unit codes were black with evidence of repainting behind the letter 'K' suggesting that the aircraft may have come from another Staffel or unit and a light grey over-spray toned down the white fuselage theatre band and fuselage Balkenkreuz. The spinners and propeller blades were finished in 70 and the aircraft W.Nr. was applied to each side of the fin in white.



In early June 1944, the 2.(F)/122 flew two 3000th missions, the first taking place on 6 June when Messerschmitt Me 410 1944, F6+OK crewed by Oblt. Herbert van den Daele and Uffz. Blaschek, departed from Perugia at 0510 hrs and returned approximately 2 hours later only to suffer a major accident on its return. The Staffel then completed the second of these missions two days later when Messerschmitt Me 410 F6+KK, illustrated in the accompanying photograph, returned to Perugia just prior to 0500 hrs at the completion of an early morning sortie on 8 June.

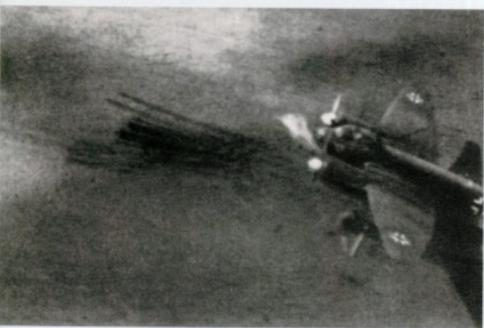
British military personnel examine the port fuselage barbette and MG 131 heavy machine gun of Messerschmitt Me 410 A or B-3, F6+AN of the 5.(F)/122, which was captured at Beldringe, Denmark, in May 1945. Probably finished in 74/75/76, while outlined in white, the individual aircraft letter 'A' appears to be either blue or red but no further information about this is presently available.



## Wekusta - Routine and Misfortune



This photograph of 5M+C, a Heinkel He 111 H-2 of Wekusta 5, was taken while it was engaged on a northern weather sortie from Værnes in September 1940.



On 14 June 1942, Lt. Wagner of the Banak-based Westa 5 flew this Junkers Ju 88 D-1, 1B+GH, to the west coast of Spitsbergen to deliver supplies to German meteorologists. However, the machine's propellers were damaged when the aircraft landed, preventing it from taking off again. Two weeks later, on the morning of 27 June, the Ju 88 was spotted by the crew of a specially modified Catalina of 210 Sqn. RAF on a long-range reconnaissance mission from the Shetland Islands. Opening fire on the Ju 88, the Catalina's gunners expended some 1,500 rounds of ammunition, which so damaged the aircraft that it had to be abandoned.

This Ju 88 D-1 of Westa 1 took off from Bad-Zwischenahn in north Germany on 22 November 1943 to carry out a weather reconnaissance flight over the North Sea. However, on its return flight, weather conditions over Germany resulted in the aircraft, D7+BH, being diverted to Stavanger where it was attacked from dead astern at a height of 60 m (200 ft) by a Mosquito of 333 (Norwegian) Sqn. RAF. The Mosquito pilot opened fire at 550 m (600 yds) range, causing pieces of the fuselage to fall off and setting the starboard engine on fire. The Ju 88 then dived into the sea, killing all four of its crew.

A second supply run by Wekusta 5 to weather station Bansø at Adventdalen on Spitsbergen on 14 July 1942 almost ended tragically for the crew of Heinkel He 111, 1B+OH, when it broke through the frozen surface of the nearby fjord which was being used as a landing strip. Although the crew escaped injury, the Heinkel was later lost in the fjord.



An unidentified crew about to board Junkers Ju 88 D, 4T+GH of Westa 51 at Nantes during 1943 or early 1944. Immediately in front of the photographer is the weather observer who is carrying two meteorographs which, when connected to external sensors fitted to the aircraft, would record on their drum charts, temperature, humidity and barometric pressure.



1942-1945

## Night Photographic Reconnaissance

**N**ight photographic reconnaissance greatly complemented the normal day reconnaissance missions of the *Luftwaffe*. It successfully allowed for the reconnaissance coverage of particularly well-protected targets, which could not be covered without opposition during daylight hours. Additionally, night photographic reconnaissance was employed successfully throughout all theatres for the following purposes:

- The detection of changes in the occupational state of airfields, harbours, communications centres and troop and equipment concentration.
- The monitoring of troop movements and river crossing points.
- The monitoring of shipping movements and convoy orders of sailing after their detection by radar and the locating and observation of night anchorages.
- The location and identification of night decoy sites not readily apparent during daylight hours.
- Damage assessment reports immediately following night attacks and the location of anti-aircraft batteries around targets.

At the beginning of the Second World War, German equipment used for night photographic reconnaissance was woefully inadequate, with the only available night camera being one with a focal length of 18 cm (7 in) that produced a small format image of 10 cm x 16 cm (3.9 x 6.25 in). Using this camera and single flash-bombs limited its use to taking individual photographs from medium altitude. However, as the camera was entirely hand operated, it was extremely difficult to achieve successful results.

Used operationally over central and southern England at the beginning of the war, by mid-1940, it had become clear that these cameras could not meet the operational requirements. Not only were the images too small but the area of coverage provided was often found to be insufficient for practical interpretation. To overcome these problems and improve the overall general quality of the results obtained from night photographic sorties, the following recommendations were put forward:

- That the camera be motorised to prevent faulty timing between exposures.
- That a strip photograph camera with overlap be put into production.
- An increase in focal length to improve the scale of the images obtained.
- An increase in the size of negative.

During December 1940, the first aerial trials with a night automatic strip camera were carried out, and after slight modification, this trial model was used operationally on targets in the United Kingdom. These trials under operational conditions gave rise to further improvements and finally, after additional remedial trials in the North African theatre, the new automatic equipment was put into service.

The taking of each photograph necessitated the use of a flash bomb, which was set by an electric fuse to detonate at a predetermined time. However, for pyrotechnical reasons, it was not possible to decrease the burning time of the bomb to a point where instantaneous photography became possible. Initially, in preparation for taking a photograph, the shutter of the camera was opened shortly before detonation of the flash bomb, thus exposing the film for the entire burn period of illumination, which resulted in a blurring of the image due to the forward movement of the aircraft. This blurring was overcome by advancing the film in the direction of flight at a rate dependent on ground speed, altitude and focal length. The rate at which the film required advancing was obtained by using the following formula:

$$vb = \frac{Vg \times F}{H \times 3.6}$$

Where:  $vb$  = Movement of film

$Vg$  = Ground speed in km/h

$F$  = Focal length in mm

$H$  = Altitude in metres

The shutter was closed immediately after the illumination from the flash bomb expired and the film advanced to the next frame in preparation for the next exposure. To complete one exposure, the observer/camera operator had to carry out five separate actions that had to be carried out at accurately timed intervals in order to obtain good strip photographs of the coverage required. They were:

- Release the flash bomb.
- Set the camera for the correct film movement from a previously calculated table.
- Open the camera shutter shortly before the flash bomb ignited.
- Close the camera shutter immediately after the exposure.
- Advance the film.

Continuing experimentation and the experience gained through the operational use of night photography saw improved automated night cameras begin to enter service. Two such examples were a servo-assisted hand camera with a focal length of 12.5 cm (4.9 in) and 1:2 Xenon lens which produced an image of 7 x 9 cm (2.75 x 3.5 in) and an automated NRb 35/25 camera with an Aeroxon 1:2.5 lens which produced an image size of 25 x 25 cm (9.8 x 9.8 in).

For night photography, a special type of film known as *Aero-Rapidfilm* was used which was extremely brittle thus preventing it from being stored for a prolonged period of time. Highly sensitive and more coarsely grained than daylight film, the grain becoming evident when negatives, notably of 7 x 9 cm (2.75 x 3.5 in), were enlarged.

The interpretation of night photographs presented many difficulties since every source of light had a variable effect on the film while the shutter was open, the most varied being those caused through inaccurate camera settings and movements by the aircraft during exposure times. Experienced interpreters were able to determine the effects from searchlights, gun flashes, tracer fire and fires on the ground and so eliminate peripheral effects when studying these photographs.

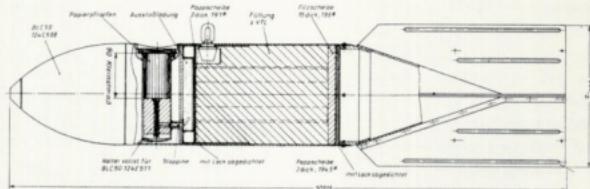
#### Target Illumination

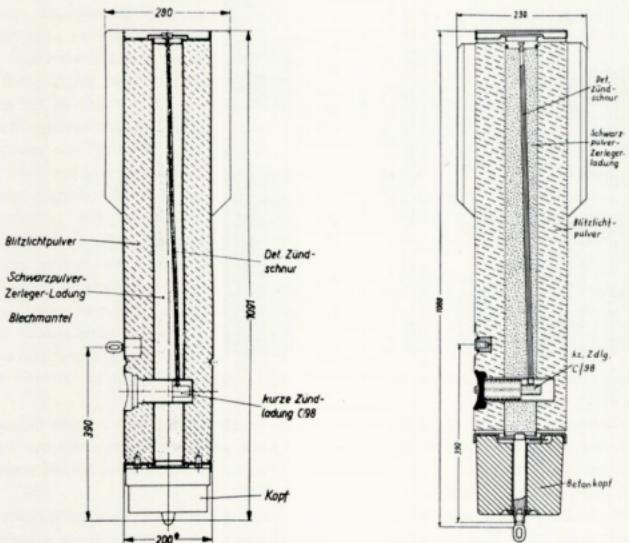
The BLC 50, 50 A and 50B<sup>1</sup> flash bombs used in German night photography had a comparatively short burn time of between 0.3 and 0.5 seconds during which the intensity of the 40 million candlepower light curve rose steeply and fell correspondingly fast.

Used in early night photographic operations, the BLC 50 flash bomb frequently suffered from either a protracted burn time or complete failure to ignite and was quickly replaced by the more reliable BLC 50 A and BLC 50 B. Externally similar to the conventional 50 kg (110 lb) SC 50 general-purpose bomb, the main casing of the BLC 50 was made of sheet steel and contained magnesium candles that were ignited by means of an electrical fuse. Fitted with a heavy cast iron nose section, the complete bomb weighed approximately 36 kg (79.2 lb).

Similar in outward appearance to German air-dropped parachute flare containers, the BLC 50 A and BLC 50 B comprised a cylindrical sheet steel casing with four stabilizing fins at the tail and a blunt nose. Filled in a similar manner to the BLC 50 and more usually activated by a mechanical or barometric fuse, they weighed approximately 42 kg (92 lb) and had the nose of the casing filled with concrete to provide stabilization in flight.

*Right and opposite page top: German schematic drawings of the three principal flash bombs used for night photographic reconnaissance, the BLC 50, 50 A and 50 B.*





During the mid-war period, some experimental work was carried out to produce a 250 kg (550 lb) flash bomb but this proved unsuitable for operational use and excluding one trial in April 1942 over the British naval anchorage at Scapa Flow – it was not used.

By 1943, Germany had developed a flash bomb with a maximum illumination of 60 million candlepower that was far more powerful than the earlier models. The fuse of these bombs could be set to ignite at a predetermined altitude with the normal height for ignition being 2743 m (9,000 ft). Duration of the illumination at ignition was approximately 0.4 of a second. The speed and altitude of the aircraft determined the interval between bomb release and film exposure with a normal overlap of approximately 60 per cent and adjustable as required. A normal flash bomb load for a night reconnaissance sortie was between four and ten bombs.

#### Night Reconnaissance Tactics

The differences in the aerial situations on the Eastern and other fronts required the development of specific operational tactics for the night photographic missions performed in each of these theatres. On the Eastern Front, night photographic sorties took place almost exclusively in conjunction with those for nocturnal visual reconnaissance. Since missions for the latter purpose were flown well below the minimum altitude required for photographic sorties, the reconnoitring aircraft would have to climb to between 1,200 and 2,000 m (3,900 to 6,500 ft), and occasionally to heights of 4,000 to 5,000 m (13,000 to 16,000 ft) over well-defended protected targets, before making its photographic run. Although for work at lower altitudes the original night cameras had proved adequate, they were replaced as newer cameras with better lens systems and greater focal length became available.

On the Eastern Front, the primary role of night photography was to detect the occupational state of airfields and observe river crossings and mechanised troop movements. Reconnaissance sorties covering road and rail systems were normally carried out visually, the number of sorties being dependent upon the urgency of the situation and prevailing weather conditions.

In the Western and Mediterranean theatres, night visual sorties were carried out at altitudes between 4,000 and 6,000 m (13,000 and 19,000 ft) and were used primarily for the reconnaissance of harbours and shipping. Also in the Mediterranean theatre, convoys, airfields and harbour installations were frequently photographed at night and it was found that a paired camera installation with the cameras offset 18 degrees from vertical to provide a 30 per cent overlap was particularly useful for these missions.



Dornier Do 17 P-1, coded K7+GL, of 3.(F)/Nacht taken at Pleskau in the summer of 1942. First formed at Insterburg in June 1941, the Staffel, operating a mix of Dornier Do 17 P, Heinkel He 111 H-6 and Dornier Do 217 aircraft, spent its entire operational life on the Eastern Front before moving to Brieg (Brzeg) in south-western Poland where it is understood to have been disbanded in December 1944. While the under surfaces, cowlings and complete nose section of the aircraft have been painted in either black or a very dark grey, the top and sides of the rear fuselage, the vertical fins and presumably the remaining upper surfaces, have been left in their original 70/71 camouflage. The fuselage Balkenkreuz, theatre band and aircraft letter in the Staffel colour of yellow show no sign of having been toned down for night operations.

on a regular basis, inland flights to targets by a single aircraft could not be assured of the same success.

In the West during Operation Steinbock, the series of aerial attacks on Britain between January and May 1944, one or two photographic reconnaissance aircraft would accompany each first wave of bombers to photograph the route and target indicators, while one or two of these aircraft would also accompany each last wave to take damage assessment photos.

While the majority of night reconnaissance aircraft were equipped with tail warning radar, most crews preferred to rely on their own experience and alertness to detect night fighters, a preference which continued, even when newer sets such as the FuG 214, 216 and 217 became available. Even so, a more successful aid for these crews, especially for work at low altitude, was the FuG 101 radio altimeter, which was fitted as standard equipment. Low-altitude night-fighter attacks against reconnaissance aircraft were often foiled successfully due mainly to the excellence of the FuG 101 equipment which allowed an aircraft to be flown confidently and accurately at very low level in darkness; thus allowing it to perform evasive manoeuvres which an aircraft not so equipped could only follow at the risk of crashing.

As with their contemporaries in the bomber Gruppen, the crews of aircraft engaged on night reconnaissance missions often carried packages of the German equivalent of the metal foil strips used for radar jamming known to the Allies as 'Window'. Known to Luftwaffe aircrew as *Düppel*<sup>2</sup>, a crew would often disperse the contents of these packages when encountering heavy anti-aircraft fire and often in target areas in the hope that it would jam the perceived radar control of searchlights and anti-aircraft guns. Additionally, several of the units engaged on night reconnaissance were equipped with the FuG 200 *Hohentwiel* shipping search radar, used to locate convoys or individual Allied ships at sea, in coastal waters and the English Channel. Night reconnaissance aircraft often acted in the flare-dropping role when working in cooperation with an 'S'<sup>3</sup> boat flotilla; once the reconnoitring aircraft had located a convoy or other suitable shipping target, it would take up a suitable position from which to drop flares to illuminate or silhouette the ships for a coordinated attack by the flotilla.

### Night Photographic Aircraft

For night photographic sorties, the principal aircraft involved were the Dornier Do 17, Do 215, Do 217 and Heinkel He 111. On the Eastern Front, this role fell mainly to the Do 17, Do 215 and He 111 aircraft of the four Staffeln of the Aufklärungsgruppe (F) Nacht. In the Western and Mediterranean theatres, the aircraft most frequently used in this role were the Junkers Ju 88 and Ju 188 along with the Dornier Do 215 and Do 217. For a short period, the Messerschmitt Me 410 was also employed in these types of mission but operational experiences showed that a larger aircraft with a crew of three or four was far more suitable. During 1944, the camera operation in the Messerschmitt Me 410 was converted to a fully automatic system; however, although it negated the position of an observer in the crew, it still required a crewmember to operate the rear defensive armament, but it would appear that this technique was not fully resolved before the cessation of hostilities.

Night photographic missions in these theatres were normally flown at altitudes between 7,000 and 9,000 m (23,000 and 29,000 ft); and so far as was operationally possible, the time over the target was selected so that the light of the moon would aid target identification. When the moon was full, however, the success of these missions was compromised by the increased risk of interception by night-fighters. Yet even under full moon conditions, while coastal targets were photographed successfully

1. Blitzlichtzyndrische Bombe - Cylindrical Flashlight bomb

2. Named for the Düppel Estate near Berlin where the first German trials of this jamming medium were carried out

3. Schnellboot (Lit. Fast boat). Known to the Allies as 'E' (for 'Enemy') boats

## The Short-range Photographic Unit

**T**he *Bildstelle*<sup>1</sup> of a short-range reconnaissance unit was under the command of a *Bildstelleoffizier*, usually in the rank of *Oberleutnant* or *Leutnant*. Directly under the *Bildstelleoffizier* and in charge of the practical aspects of the unit was a senior non-commissioned officer, usually in the rank of *Oberfeldwebel* and known as a *Bildstelleleiter*<sup>2</sup> who was responsible for the operation of the unit's three sections, these being Interpretation, Photographic and Equipment.

Under the command of a *Feldwebel* and directly responsible to the *Bildstelleleiter*, the interpretation section was usually staffed by between 12 – 15 men who normally included amongst their number, experts on airfields, defence networks and other areas of interest. If the unit was involved in coastal reconnaissance, the interpretation group would also include an interpreter who had attended a shipping interpretation course at Kiel and so would be familiar with shipping, harbour and coastal installations.

The photographic section was usually in the charge of a *Feldwebel* under whom were three groups, usually of four or five men each and headed by an *Unteroffizier*, whose duties were film processing and printing, making of contact prints or enlargements and other associated work.

Usually headed by an *Unteroffizier* with a staff of three or four men, the equipment section was responsible for general camera and associated equipment maintenance and the fitting and removal of film magazines. They were also responsible for ensuring that on the completion of an imaging sortie, those magazines containing the exposed film were delivered to the photographic section in a timely manner.



*Bildstelle equipment personnel of the 5.(F)/123 are pictured in the process of installing a fresh film magazine on to the fuselage-mounted Rb 75/30 of Messerschmitt Bf 109 G-4/R3, 'Red 12', at St. Pol, France in mid-1943.*





A member of the equipment section of the Bildstelle of the 5.(F)/123 is seen here preparing to install a pair of Rb 127/5 cameras into their mountings in the centre fuselage section of a Focke-Wulf Fw 190 A-3/U4 at St. Pol, France in early 1943.

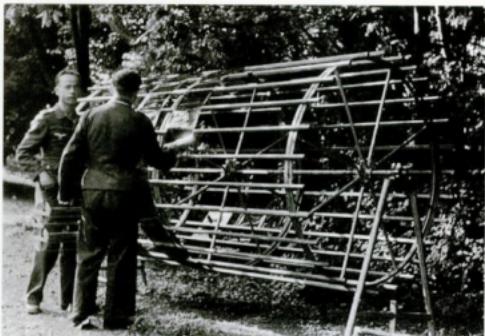
A copy of the mission order was also sent to the head of the equipment section who, based on the prevailing weather conditions over the target area, selected the film, camera aperture and exposure required, these latter two being pre-set on the camera along with the required overlap and film speed.

On completion of the mission, members of the equipment section removed the film magazine(s) from the aircraft and handed them over to the photographic section for developing. For a film of 90 exposures of 30 x 30 cm (11.8 x 11.8 in), the processing time was approximately 15 minutes from the time of receipt to the time of completion. A rush interpretation known as a *Nassauswertung* or 'wet evaluation' was then made by the *Bildstelleleiter*, often along with the pilot or observer with any information of importance being passed on immediately, usually by telephone, to the *Ic/Lw* who in turn passed this information on to the requesting army formation. The substance of this information usually depended on what the army formation had included in its initial request including anything of an immediate tactical significance as well as other general target observations made or photographed during the sortie.

### Operational

As an example of a typical request for an imaging sortie from an army formation, this would be sent from the requesting army formation to the *Ic/Lw* who then passed it on to the *Kommandeur* or *Staffelkapitän* of the unit chosen for the task and who in turn, assigned it to a pilot/crew. The mission orders for the pilot or observer gave the scale of the photographs required, the area to be covered and whether a strip or mosaic format was required and allowed him to determine the required height for the photographic part of the sortie.

*Although more than 50 years separate these two photographs, they illustrate an alternative method of drying the negatives from an imaging sortie that has stood the test of time. In the bottom left-hand photograph, Bildstelle personnel have placed a rotating drying rack outside to take advantage of good summer weather in France in 1943 while in the photograph below, the photographic personnel of 39 Sqn. RAF have utilised an iron fence for the same purpose while on detachment to sunnier climes in 1994.*



The usual scale of photographs for these sorties was 1:10,000 which produced an image of sufficient size to allow clear identification of most tactical targets. If, however, a specific target from the initial wet interpretation could not be identified clearly, then the film was dried and the more important exposures viewed in front of an illuminated screen through a 10-x power magnifying glass. If this method proved insufficient to provide a positive identification, a print was made to aid in making an exact interpretation of the area or item of interest.

After this rush interpretation, most notably in the case of a requirement for strip or mosaic, the entire film was printed and when a particular target or item of interest was in question, the relevant

frames would be annotated, usually in Indian ink on the back of the negative and sufficient prints made for distribution. The film used for these prints was the original and seldom, if ever, was a negative duplicate made. In the case of tactical targets, this interpretation was final, and usually, no further reports were made. The finished, annotated prints were passed to the *Bildstelleoffizier* who had them dispatched by courier aircraft to the interested commands.

### Interpretation

Each *Bildstelle* held an indexed, loose-leaf book known as a target folder containing sketches, photographs and other information to aid the interpreters in their work. Regularly updated with new target information as it became available, the minimum scales for target interpretation were as follows:

#### Target Scale

Heavy anti-aircraft positions

1:10,000

Light anti-aircraft positions

1:6 – 7,000

Minor defences

1:3 – 4,000

Aircraft recognition by type:

1:10 – 12,000 for a specialist

Distinguishing armour from soft-skin vehicles

1:8,000 for a general interpreter

Recognition of armoured vehicles by type

1:12,000

The identification of the function of parts of

1:5,000

an industrial plant

1:15 – 20,000

Reporting existing damage to buildings

1:10,000

Reporting amount of damage to buildings

1:8,000

Identifying military rolling stock on railways

1:5 – 6,000

Troop movements

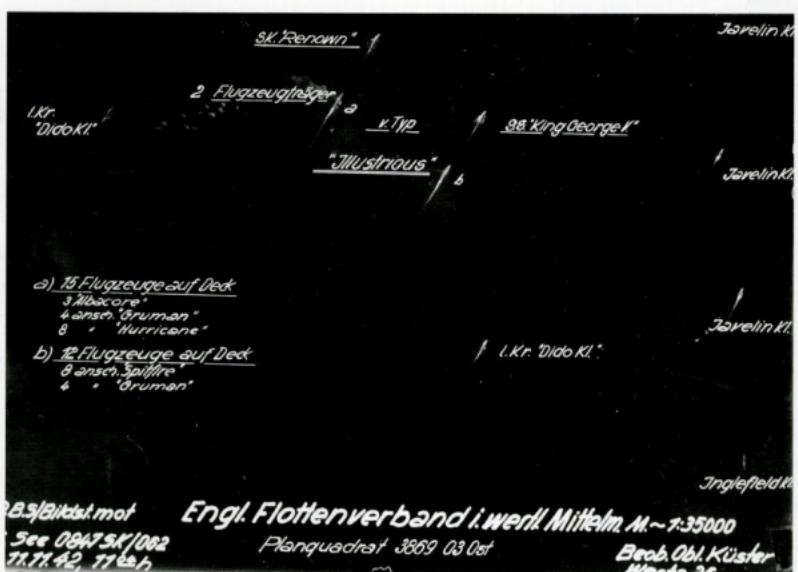
1:9,000

Comparison with maps

1:30 – 40,000

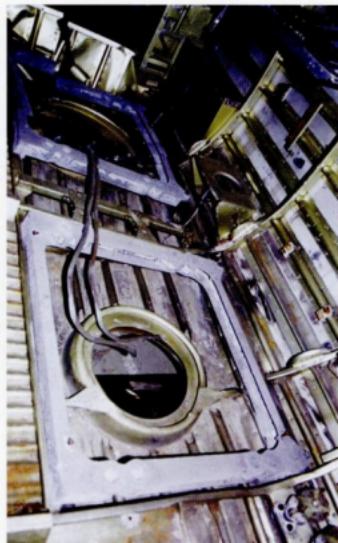


*Bildstelle* photographic interpreters are seen here scaling a recently developed image of a harbour to identify the shipping that it may contain. Ship identification charts, a tray of marking inks and pens and a loupe, for closer examination of an item in an image, may also be seen on the table.



Although not taken by a short-range aircraft, this photograph will serve to illustrate how notations were made on aerial photographs. Taken on 11 November 1942, it shows Royal Navy shipping in the Mediterranean, which was photographed by an aircraft of Westa 26, the observer of which was an Oblt. Küster. The Interpreter has noted the following: two light cruisers of the Dido class, three Javelin or 'J' class destroyers, HMS Renown, HMS King George V, two aircraft carriers of the Illustrious class and one 'I' class destroyer which he has noted as an Inglefield class. On 25 February 1944, HMS Inglefield of this class was sunk off Anzio by an air-launched, wire-guided missile.

Two colour photographs of the camera bay in Junkers Ju 88 D-1, W.Nr. 0881203, 4N-EH, of the I.(F)22 which was hit by Flak during a sortie from Kirkenes and force-landed at Kinnarodden, Norway on 17 February 1943. Acquired by the Norwegian Government as scrap after the war, it was sold to a group of private individuals who in turn, sold it to the National Norwegian Aviation Museum at Bøde where it is currently under restoration.



Interpretation was carried out with the aid of a 10-x power magnifying glass but stereoscopes were seldom used. The scales shown on the previous page were also applied to the interpretation of the original film if the interpreter was a negative specialist. If, however, the unit did not have such a specialist then a regular interpreter, who usually required the scales to be increased by 20 per cent, would carry out the work.

### Mosaics

Mosaics were a regular output of a *Bildstelle* and to compose them, they had the individual photographs scored across the back and torn with a part of the film left for joining purposes. When completed, the mosaic was annotated in white prior to being cut into 60 cm squares (approximately 23.5 in), photographed and then printed out. Usually, no written report accompanied the mosaics that were distributed to interested commands.

### Films

A 30 x 30 cm (11.8 x 11.8 in) film usually provided 180 exposures, but as the developing equipment and drying racks of the mobile units were too small to accept this length, the film was cut in half before being processed. This film also had the exposure number automatically recorded at the bottom of each frame but this was not available for the smaller 7 x 9 cm (2.75 x 3.5 in) film and so had to be written on an adhesive label or on the film itself. If a reprint of any exposure from a 7 x 9 cm film was required, a contact print would not be made but rather the film would be put into an enlarger, which produced an 18 x 24 cm (7 x 9.5 in) print.

Generally, only the original films were used by the *Gruppe Stab* and annotations were made on these. A careful record was kept of all films with each allotted a number which was actually that of the sortie undertaken by the *Gruppe*; the films were numbered consecutively and registered the results of the sortie.

If two separate target areas were photographed during the same sortie, the film was cut at the appropriate frame and each half identified accordingly. When the rush and first interpretations were completed and the necessary prints made, the film was stored away in case further prints were required. It was only sent to the *Fliegerkorps* or higher command if specifically called for. However, if the short-range unit was transferred to another command, all films which it had taken, were sent to the appropriate *Stabia*<sup>3</sup> which in turn would normally send them to the *Abteilung Luftbildwesen*<sup>4</sup> at the RLM for storage<sup>5</sup>.

1. Photographic Unit. The organisational structure and duties of the *Bildstelle* for both long- and short-range units were fundamentally the same

2. Photo Unit Leader

3. Stabsbildabteilung – Staff Photo Department

4. Department of Air Photo Affairs

5. Originally kept in normal storage facilities, this material was later removed for storage on barges moored in a lake to preserve it from possible loss by fire as Allied air raids intensified

## The 2. Fernaufklärungsstaffel 123 in the Mediterranean



Seen banking away from the accompanying aircraft, Junkers Ju 88 D 4U+KK of the Athens-Tatoi based 2.(F)/123 is finished in a single sand-coloured upper camouflage colour with blue under surfaces. It carries a white theatre band around the rear fuselage and the aircraft letter 'K' is in the Staffel colour of red with a thin white outline.



A Junkers Ju 88 D of the 2.(F)/123 is seen here being refuelled at its base at Kastelli, Crete, in mid-1942. Finished in what appears to be the sand colour 79, the tips of the spinners for the VS-11 propellers are painted in the Staffel colour of red.



A close-up view of the nose of a sand-coloured Junkers Ju 88 D of the 2.(F)/123 showing the Staffel emblem of a white eagle clutching a telescope superimposed on a black bordered yellow and red quartered shield.

Junkers Ju 88 D-2, 4U+GK of the 2.(F)/123 undergoes servicing beneath the Mediterranean sun at Kastelli on the island of Crete during the summer of 1942. Sitting in bright sunlight, the single 79 upper camouflage colour appears much brighter than it really was; it carries a single drop tank on an ETC carrier beneath the inner port wing.



An unidentified Messerschmitt Bf 109 G-4/R3 of the 2.(F)/123 is seen here at Kastelli, Crete, during the late spring of 1943. Finished in what appears to be the standard day-fighter camouflage of 74/75/76, the under surfaces of the wing tips and spinner are white and it may have carried a white tail band. The lower engine cowling may also have been painted yellow.



Close-up views of two of the high-altitude Junkers Ju 88 Rs operated by the 2.(F)/123 from Sicily during 1943 and 1944. Prior to embarking on its reconnaissance sorties with the type, the Staffel had cooperated closely with the Versuchsvorband ObdL. Although not readily apparent here, the aircraft are understood to have worn an overall 02 finish with standard black and white national markings above the wings and on each side of the fuselage and fins. A white band was applied around the rear fuselage and each aircraft carried full Staffel codes with the aircraft letter in or outlined in the Staffel colour of red. National markings were not applied to the lower surfaces of the main wings.





*Emblem  
of 2.(F)/123*

A three-quarter head-on view of Junkers Ju 88 T-1, 4U+VK, of the 2.(F)/123 at Athens-Tatoi during late 1944. During the late summer of 1943, the radio operator who usually flew in this particular aircraft was Heinz Kathlein who participated in sorties over the eastern Mediterranean, Tobruk, Sicily, Cyprus and Alexandria. Interestingly, this particular aircraft was fitted with the late A-series bulged, rear cockpit canopy with two gun positions rather than the narrower, single gun canopy normally associated with the S and T series of Ju 88.



### **Junkers Ju 88 T-1, 4U+VK of 2.(F)/123**

The aircraft was finished in the standard bomber camouflage of a segmented upper surface pattern in the colours 70 and 71 over blue 65 under surfaces. While the aircraft and Staffel letter remained at their usual height, the unit identity number/letter combination, in accordance with the 1943 directive, was applied at one-fifth the height of these letters. A white theatre band was carried around to the rear fuselage on which, on the port side, the aircraft letter 'A' was applied in the Staffel colour of red. It carried the eagle and telescope Staffel emblem on both sides of the nose and the upper surface national markings were applied in a simplified, white only format.

## 1.(H)/Aufklärungsgruppe 41

*Staffel ground personnel of the 1.(H)/41 pose in front of one of the unit's Henschel Hs 126 A aircraft at Hückelhoven, Germany, in the spring of 1940. Clearly visible in this view is the early, narrow-armed fuselage Balkenkreuz and the position of the swastika, which is bisected by the gap between the rudder and rear vertical edge of the fin.*



**A**t first equipped with Heinkel He 45 and He 46 aircraft, the 1.(H)/Aufklärungsgruppe 41 was formed from the 1.(H)/Aufklärungsgruppe 52 in the Czech town of Reichenberg (Liberec) to the north-east of Prague on 1 November 1938. In early 1939, it converted to the newer and more efficient Henschel Hs 126 prior to transferring to Stubendorf, Silesia, at the end of August that same year.

At the outbreak of hostilities on 1 September, the *Staffel* had a total of 12 Hs 126 aircraft on strength, which it flew in the tactical reconnaissance role for the IV. Armeekorps/AOK 10 from a variety of airstrips in central Poland along the line of advance Czestochowa-Radom-Lublin-Chelm. Following the end of the campaign in Poland, in which the *Staffel* suffered no aircraft losses, its immediate whereabouts and activities are unknown until March 1940 when it was recorded as being at Hückelhoven, some 20 km (12.5 mls) to the south-west of the North Rhine-Westphalian town of Mönchengladbach.

While still based at Hückelhoven, in early March the *Staffel* was assigned to the IV. Armeekorps located in the Eifel area of the Belgian-German border, during which time one of its Hs 126 aircraft was damaged after force landing due to engine failure near the town of Witten to the south-west of Dortmund on 8 March.

With the onset of *Fall Gelb*<sup>1</sup> on 10 May 1940, the *Staffel* flew in support of the IV. Armeekorps/AOK 6 in its fast-moving advance across central Belgium, which by late May had reached the area of the French town of Lille, during which time the *Staffel* suffered five aircraft casualties. On the first day of the offensive, an Hs 126 was lost to an unspecified cause and was followed on 12 May with a second lost to an RAF Hurricane of the Advanced Air Striking Force near St. Trond and a third shot down by a Hurricane to the east of Brussels on 15 May. On 19 May, a Junkers W.34, possibly a *Staffel* hack or communications aircraft, was lost to an unknown cause, and on 30 May a fourth Hs 126 was damaged by anti-aircraft fire while on a sortie in the vicinity of the French town of St. Lucienne.

Following the end of the campaign in France, the *Staffel*, still assigned to IV. Armeekorps but now under the *Koluf 16. Armee*, moved to Royan, on the north shore of the Gironde Estuary. Although unclear, its activities during its time at Royan seem to have been centred on training and coastal patrols during which, on 24 October, Hs 126 B-1, W.Nr. 4130, C2+DH crashed into the Bay of Biscay while on a routine training flight, its crew being rescued by a local fishing boat.

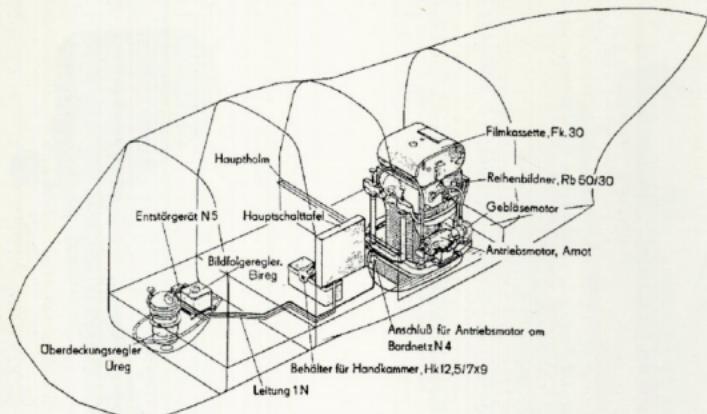
Little is known of the activities of the *Staffel* until April 1941 when it underwent conversion on to the Fw 189 and throughout June and July operated in the Mielec-Rzeszow area of southern Poland under *Koluf 17* in support of the IV. Armeekorps on its advance through Galicia via Lvov into the western Ukraine at the start of Operation Barbarossa. During August and September, the *Staffel* was still with IV. Armeekorps where it operated along the Dnieper River in the central Ukraine between

Focke-Wulf Fw 189 A-1, C2+EH of the 1.(H)/41 is seen here preparing to depart from a landing strip in the area of Vyazma - Gradina in the central sector of the Eastern Front during the late spring of 1942. Judging by the salute being given by the officer, in the foreground it is thought likely that this photograph was taken during the departure of a senior officer of either the Luftwaffe or the Heer.



#### **Focke-Wulf Fw 189 A-1, C2+EH of 1.(H)/41**

The aircraft is finished in a segmented upper camouflage of 70 and 71 with the under surfaces in 65 and 70 on the propeller blades and spinners. It carries the yellow theatre band around each tail boom while the yellow applied to the undersides of the wing tips reach farther inboard than usually seen on this type of aircraft. Although not readily apparent in this view, the lower horizontal arm of the aircraft letter 'E', which is repeated beneath each wing tip, is slightly longer than the top horizontal arm.



A drawing from the Focke-Wulf Fw 189 handbook showing the Rb 50/30 camera installation and the stowage position for the HK 12.5 hand camera.

Kanев and Cherkassy and where, between 22 June and 18 October, it suffered eight known aircraft casualties, these being five Fw 189s, one Hs 126 and a Klemm Kl 35 B, W.Nr. 4608 which had sustained 80 per cent damage in a crash-landing at Krasilov on 13 July. The last of these casualties, Fw 189 A, W.Nr. 2085, was damaged in combat with a Russian fighter near Krasnograd on 18 October resulting in the death of one crewmember with Lt. Gerhard Mollenhauer and the third member of the crew wounded. A few weeks later, with the onset of winter, the *Staffel* was withdrawn to Germany for a period of rest and refitting.

In the spring of 1942, the *Staffel* returned to Vyazma – Gradina on the central sector of the Eastern Front where, from late May, along with the 3.(H)/21 and 2.(H)/23, it operated under the control of the recently created *Stab/NAGr. 2* in Generalmajor Hermann Plocher's 4. *Fliegerdivision*. On 28 June, Fw 189 A-1, W.Nr. 2186 was damaged by anti-aircraft fire near the town of Semino, wounding two of the crew. A second Fw 189 A-1, W.Nr. 0194, was damaged by ground fire at Temkino on 14 August. Eleven days later on 25 August, Fw 189 A-3, W.Nr. 2131 suffered heavy damage from anti-aircraft fire near Temkino, and on 4 September, Fw 189 A-1, W.Nr. 0070, returned to Vyazma-Gradina with a badly wounded crewmember after being attacked by a Russian fighter.

In January 1943, the *Staffel* transferred to Voroshilovgrad in the Donets Basin area of southern Russia to reinforce the front west of Stalingrad, losing an aircraft and its crew of three during the transfer when Fw 189 A-1, W.Nr. 0156 crashed near Bryansk. In February the *Staffel* still under the control of *Stab/NAGr. 2* transferred to the control of the *Stab/NAGr. 12* and in April, to that of the *Stab/NAGr. 1*. On 9 February, Fw 189 A, W.Nr. 125182 returned to Voroshilovgrad with 10 per cent damage after falling victim to light Russian anti-aircraft fire, and on 21 April, Fw 189A-2, W.Nr. 125212 was hit by ground fire near Voroshilovgrad, which damaged the aircraft and wounded one of the crew.

Throughout the spring of 1943, elements of the *Staffel* had also operated from the airfield at Rovenki some 50 km (31 mls) south of Voroshilovgrad. On 30 May, in what would prove to be the last loss report from the *Staffel*, Fw 189 A-2, W.Nr. 12515, coded C2+IH, was reported as having been shot down by anti-aircraft fire while on a sortie to an area to the north-east of Nizhiy-Nagolchik with its crew of three listed as missing in action.

As far as can be determined, the *Staffel* remained under the control of the *Stab/NAGr. 1* until the mid-summer of 1943 when it returned to Germany to undergo conversion training on to the Messerschmitt Bf 109. While based at Bayreuth-Bindlach in early December 1943 and equipped with Bf 109 G aircraft, the *Staffel* became the 2./NAGr. 14 and remained in Germany until April 1944 prior to moving to Roman, Romania, as an element of General Otto Dessloch's *Luftflotte 4* in April 1944. Depending upon which sources are consulted, the service life of the *Staffel* ended either in Veszprém, Hungary, in March 1945 or as a part of the 18. *Fliegerdivision* in Vienna on 1 May 1945.

<sup>1</sup> Case Yellow; the German code name for the attack against the Western Allies in Europe in May 1940

## Maritime changes and the Seeaufklärungsgruppe 130



The starboard sponson of Dornier Do 18, K6+EL of the 3./KüflGr. 406 is inspected at an unidentified location in France during the late summer of 1940. The aircraft wears the standard maritime finish of a segmented 72/73 upper surfaces with all lower surfaces in 65 and the individual aircraft letter 'E' is of the Staffel colour of yellow. The 3./406 would later become the 3./SAGr. 130.

A little over a year following the reorganisation of the short and long-range land-based reconnaissance Staffeln, the issue of Rdl. und Obdl. Genst. Gen. Qu. 2.Abt. B. Nr. 9281/43 gKdos on 5 July 1943 saw the majority of the Küstenfliegerstaffeln and Aufklärungsfliegergruppen (See) reformed into Seeaufklärungsgruppen with the majority of the Norwegian-based maritime units formed into the two Seeaufklärungsgruppen, the SAGr. 130<sup>1</sup> and 131. However, as this order had failed to take the geographical locations of the various Staffeln into consideration, following the lodging of a formal protest by Luftflotte 5, an amendment order, Rdl. und Obdl. Genst. Gen. Qu. 2.Abt. B.Nr. 10.108 was issued on 10 August 1943, which left only two Norwegian-based seaplane units unaffected by the change; the Heinkel He 115 equipped Küstenfliegerstaffeln (LT) 1./406 and 1./906<sup>2</sup> whose primary role was anti-shipping torpedo operations.

The issue of this amendment saw the formation of the Stab, and the 1. and 2. Staffeln of Seeaufklärungsgruppe 130 at Tromsö by the redesignation of the Stab/Küstenfliegergruppe 706 and the Küstenfliegerstaffeln 3./906 and 2./706 respectively, the 3. Staffel being formed at Billefjord by the renaming of the 3. Staffel Küstenfliegergruppe 406. At the time of its formation, the Gruppenstab of SAGr. 130 was equipped with a single Arado Ar 196 floatplane which was used for liaison and courier duties, while each of the three Staffeln were equipped with between eight and ten Blohm und Voss Bv 138C-1 flying boats.

A patrolling Blohm und Voss Bv 138 passes above the Tirpitz and one of her destroyer escorts as she returns to her Norwegian anchorage. Although the date of this photograph is uncertain, Tirpitz wears her camouflage pattern of late 1943 which suggests that it may have been taken on her return to Altenfjord following the conclusion of Operation 'Zitellen' in early September 1943. If this assumption is correct then it is thought likely that the Bv 138 may well be from the newly formed 3./SAGr. 130 which flew in support of the operation.

Originally, the Stab./SAGr. 130 was placed under the administrative control of Luftflotte 5 but on 16 September 1944, this control was assumed by the newly created post of Kommandierender General der Deutschen Luftwaffe in Norwegen<sup>3</sup> who retained this control until the end of the war. For operational purposes, the Stab was initially subordinate to Flflü 5 at Trondheim and remained as such until its transfer to Flflü 5 at Trondheim in April 1944. Remaining with Flflü 5





*One of five aircraft lost by the SAGr. 130 on 28 July 1943; a Blohm and Voss Bv 138 C-1 begins to sink beneath the waves after being shot down near the Shetland Islands by F/O Sydney Shulmeison, a Canadian pilot on his first operational sortie in a Beaufighter of RAF Coastal Command which was flying as a part of the aerial escort for HMS Belfast. He hit the flying boat on his first pass and the damaged Blohm and Voss put down in the sea in a heavy landing – tearing off both wing floats (they can be seen at top of the photograph). One crewman was seen to get out but he was never found.*

until early November, it was then placed briefly under the Bardufoss-based *Flü 3* before transferring for a third and final time in December to the 5. *Fliegerdivision* under whose operational control it remained until May 1945.

The principal duties of the *Gruppe* were to carry out armed maritime reconnaissance patrols and convoy search and shadowing patrols to locate and maintain contact with Allied convoys on the Iceland to Murmansk route. The individual *Staffeln* also carried out coastal and anti-submarine patrols and frequently helped to provide aerial cover for German convoys steaming in Norwegian coastal waters. Usually flown at an altitude of 1,000 m (3,280 ft), standard armed

reconnaissance missions were typically both long, boring and frequently took place in appalling weather conditions and were accompanied by the constant reminder that, for a downed aircrew, their chances of survival in the frigid Arctic waters were minimal at best.

Usually of 15 to 16 hours duration and flown at a cruising speed of approximately 230 km/h (142 mph), the long-range sorties over the Norwegian and Barents Seas ranged south-westwards to the Shetland and Faroe Islands, and from there, west to Iceland and the Denmark Strait, north-west and north to Jan Mayen and Bear Islands and Spitzbergen, and eastwards as far as the Kara Sea.

As a fully laden Bv 138 could barely make a water take-off when carrying little more than 3,000 litres (660 Imp. Gal.) of fuel, to give them the additional patrol range needed they were frequently launched from specially equipped catapult ships<sup>5</sup>, which allowed them to be launched safely with a 5,200-litre (1,143 Imp.Gal.) fuel load and six 50 kg (110 lb) bombs, carried externally beneath the starboard wing. With each aircraft usually carrying a crew of five, these patrols were flown under strict radio silence unless to report a sighting of vital importance and observations made on these patrols remained primarily visual until early 1944 when a few of the Bv 138s were fitted with the *FUG 200 Hohentwiel* maritime search radar.

The first operations by the *Staffeln* of the newly formed *Gruppe* were carried out during July 1943 when major surface units of the British Home Fleet and U.S. Navy conducted a series of forays off the Norwegian coast. In the second of these on 28 July, elements of the force, which included the Royal Navy aircraft carriers HMS *Illustrious* and *Unicorn*, were spotted steaming between the Shetland and Faroe Islands by a weather reconnaissance Junkers Ju 88 which immediately radioed information on the sighting to *Luftflotte 5*. Throughout the course of the day, five Bv 138s of the 3. *Staffel* were sent out from Trondheim to shadow the ships but the results of their sorties were less than encouraging with all five of the flying boats shot down; the first fell to Bristol Beaufighters of RAF Coastal Command and the remainder to Grumman Martlet<sup>6</sup> fighters from 878 and 890 Naval Air Squadrons aboard HMS *Illustrious*.

During the following two months, two unusual German naval operations were carried out in Arctic waters involving the Bv 138s of all three *Staffeln* of the *Gruppe* with the first, named '*Wunderland II*', getting underway at the beginning of August. For this operation, a Bv 138C-1 of the 2. *Staffel* began flying reconnaissance flights for a U-boat pack, which began at the northern tip of the Novaya Zemlya<sup>7</sup> archipelago and followed the coastal sea-lanes of the Kara Sea eastwards along the Siberian coast to scout for and locate Russian convoys, which would then be attacked by the assembled U-boats. Carried out on a regular basis from 4 August, they met with little success. After some fourteen days, with the small stock of aviation fuel carried by the U-boats running low, the Bv 138, 6I+KK, W.Nr. 0311039 was ordered to return to Norway but ran out of fuel and was ditched in the Barents Sea and eventually sank, requiring its crew to be rescued by submarine, U-601. Although the results of these first flights were far from noteworthy, more U-boats were brought into the area, and on 12 September the *Gruppe* suffered a second loss when Bv 138C-1, W.Nr. 0311034 of the 1. *Staffel* was lost in almost identical circumstances to that of the 2. *Staffel* aircraft the previous month. With only six Russian ships sunk up to the beginning of October as a direct result of these sorties, while they cannot be seen as being of any significant assistance to the U-boat packs, they did mark the beginnings of a new stage of cooperation between the *Kriegsmarine* and the *Luftwaffe* in the far northern reaches of the Arctic.

1942-1945



These three photographs are from a series that was taken of a Blohm und Voss Bv 138 C-1 rendezvousing with and refuelling from an unidentified U-boat in far northern waters. It is thought however, that as the aircraft is fitted with FuG 200 Hohentwiel search radar, the photographs were probably taken in early 1944.



At the beginning of September, the second operation named 'Sizilien' saw a large naval force, including the *Tirpitz*, *Scharnhorst* and nine destroyers, sail from Altenfjord to attack Allied installations on the island of Spitzbergen. Supporting this, parties of infantrymen landed from the destroyers would take prisoners and destroy a radio station and various supply dumps. Joining with other units flying in support of this operation, the 3. Staffel relocated from Trondheim to Billefjord, near Kistrand, in northern Norway from where it would carry out supportive operational sorties without loss.

Apart from the loss of the 1. Staffel Kapitän, Hptm. Gerhard Grosse, in a flying accident involving Bv 138 C-1, W.Nr. 0311036, 6I+GL which crashed and exploded near Repvåg on 8 December 1943; the loss of Bv 138 C-1, W.Nr. 130188, 6I+EH and its crew over the Norwegian Sea on the 25th; a further two Bv 222s shot down by RAF Mosquitoes on 21 January and 29 March respectively; and the permanent transfer of the 2. Staffel from Tromsø to Trondheim in April, operations by the Gruppe remained comparatively normal until the recommencement of Allied convoys sailing in the spring.

On 1 April, Bv 138 C-1 6I+FL, W.Nr. 1043 of the 3. Staffel was shot down over the Norwegian Sea by Grumman Martlet fighters of 819 Naval Air Squadron from the Royal Navy escort carrier HMS *Activity* while returning to Norway from a reconnaissance sortie to locate convoy JW 58. On 30 April and 1 May respectively, two 1. Staffel machines were lost to RN fighters during intense U-boat attacks on convoy RA 59, and the following week, the 2. Staffel fell victim to Fleet Air Arm fighters to whom it lost three of its Bv 138s during Operation Croquet, the carrier-borne strikes against German coastal convoys.

In mid-August 1944, the Gruppe received three of the giant Blohm und Voss Bv 222 flying boats from the recently disbanded SAGr. 129 with two apparently going first to the 1. Staffel at Tromsø while

A Blohm und Voss Bv 138 C-1 of the SAGr. 130 is shown here being pulled up onto the slipway at the Skattora seaplane base at Tromsö during the autumn of 1944.



the third was assigned to the *Gruppenstab* and based at Sörreisa, a secondary seaplane base some 60 km (37 mls) to the south-southwest. They were later used for troop transportation in northern Norway but, because of their huge fuel requirements, these flights tended to be the exception rather than the rule.

Between 22 and 29 August, the British Home Fleet embarked on a series of four attacks named Operation *Goodwood I - IV* in its third attempt that year to sink the *Tirpitz* moored in Kåfjord with a series of air strikes mounted from five British aircraft carriers. Operating temporarily from Billefjord, the 1. *Staffel* lost a total of five of its aircraft over a three-day period during these strikes, of which three are understood to have been lost to Fleet Air Arm fighters, one on 22 August and two the following day with the remaining two being strafed and sunk at their moorings in Billefjord on 24 August.

In early September, the 1. *Staffel* was given an additional task when it was assigned to carry out weather reconnaissance flights over the Arctic, which had previously been the responsibility of the Banak-based *Westa* 6 but discontinued because of fuel shortages. These missions, carrying meteorologists from *Westa* 6, were flown from Billefjord until November when they were moved to Tromsö following the evacuation of the Billefjord base. At the present time it is not known if the 3. *Staffel*, permanently based at Billefjord, was also required to carry out similar missions.

Throughout the autumn of 1944, losses to the *Gruppe* continued to rise rapidly as strikes by naval forces and RAF Coastal Command intensified along the Norwegian coast. Amongst these losses was the Bv 222 of the *Gruppenstab* which, moored at Sörreisa, was continually strafed and eventually sunk at its moorings on 18 October by Fairey Firefly fighters of 1771 Naval Air Squadron from the carrier HMS *Implacable*.

To give some indication as to the frequency with which their missions were carried out, on 20 November, the 3. *Staffel* recorded its 2000th mission since its formation in mid-1943. Similar operational milestones were being reached by the 1. and 2. *Staffeln* during the same period. Then, during December and early the following January, the *Gruppe* underwent major organisational changes. These saw the disbandment at Trondheim of *Hptm.* Rolf Lemp's 2. *Staffel* and the transfer of *Oblt.* Hans Stieler's 1. *Staffel* from Tromsö to Trondheim to provide coverage of central and southern Norway while the 3. *Staffel*, under the command of *Hptm.* Johannes Greve, remained at Billefjord to cover northern Norway. Although these changes remained in effect until May 1945, it was not uncommon for individual aircraft and crews or small detachments of aircraft of the 1. and 3. *Staffeln* to transfer to other areas as dictated by prevailing situations.

The period 9-19 February 1945 saw four Bv 138 C-1 losses occur in quick succession, all of which are believed to have been lost during the concentrated torpedo attacks against the Murmansk convoy JW 64/RA 64 which were carried out by a large number of U-Boats and elements of the II. and III./KG 26 off the North Cape. Of these four losses, W.Nr. 1004, 6I+DH failed to return from its sortie, two ran out of fuel and were forced to ditch and abandoned by their crews, and W.Nr. 0191, 6I+JL was strafed and destroyed while taxiing on the sea in the area of the North Cape. The last known combat loss to the *Gruppe* occurred on 22 February when Bv 138 C-1, W.Nr. 1030 of the 1. *Staffel* was destroyed on the water in a low-level attack by naval fighters during Operation *Groundsheet*, a British aerial minelaying operation of the Karmøy Channel which was carried out in the face of heavy German



opposition. However, by this time, the Gruppe was essentially grounded with very few serviceable aircraft and almost no remaining stocks of fuel or spare parts.

On May 8 1945, and depending upon which documents are consulted, the Stab was recorded as being at either Bodø or Tromsø under the command of Major Johann Gässler with Bv 222 V2, W.Nr. 366 and Bv 222 C-012, W.Nr. 330052 shown as being directly assigned to the Stab and listed as being moored at Sörreisa. In June, both aircraft were moved to Trondheim where, after a period of testing by the US Navy, the RAF held the Bv 222 V2 until October when, due to continuing engine problems, it was decided to sink the aircraft in the fjord off Trondheim. Accordingly, the aircraft was filled with surplus material from the former German base at IIsvika and towed to a point between Fagervik and Munkholmen<sup>8</sup> where it was scuttled in some 180-250 m (590-820 ft) of water, where it remains to this day.

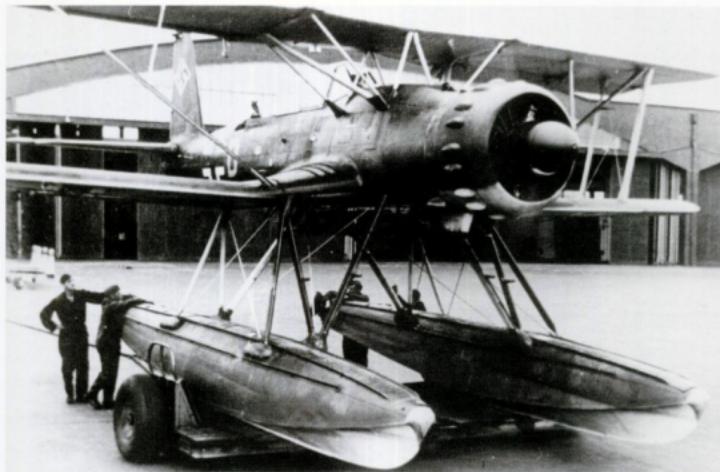
For the Bv 222 C-012 however, its demise would be less dramatic. Flown to the Marine Aircraft Experimental Establishment at Calshot, England, on 14 July, it was partially repainted and given the serial VP 501. After a period of extensive testing, it was taken out of service and laid up until being scrapped in June 1947.

Also on 8 May, the 1. Staffel at Trondheim under Hptm. Ernst Gressmann had personnel strength of three officers and 69 other ranks and two Ar 196 floatplanes, both of which were later scuttled in the fjord. Also at Tromsø on the same date, the 3. Staffel surrendered with a strength of one officer and 87 other ranks along with two remaining Bv 138s moored at Stavanger-Sola and three Ar 196 floatplanes at Bodø. The sudden appearance of five Arado 196 floatplanes raises an interesting question as to where did they come from? While not proven to date, it is thought likely that they were from the Arado-Kette Ostnorwegen, which was disbanded at Trondheim in December 1944, for it was at this time that this aircraft type first appeared in any number on the aircraft inventory for SAGr. 130.

An undated view of Arado Ar 95A 7R+ML of the 3.Aufklärungsgruppe (See) 125 moored at an unknown location at either Fischhausen, East Prussia or Helsinki between August and September 1941. Finished in the standard maritime upper splinter camouflage of 72/73 with 65 under surfaces, the aircraft letter 'M', forward section of the spinner and (apparently) the tips of the floats were painted in the Staffel colour of yellow. A narrow yellow theatre band was applied around the rear fuselage behind the Balkenkreuz. Although like the Heinkel He 60 and Heinkel He 114, the Arado Ar 95 was obsolescent by 1941, it provided sound and continuous service until progressively replaced by the Arado Ar 196 and Blohm und Voss Bv 138.

1. Sea Reconnaissance Group 130
2. Shortly after the promulgation of the amendment order the 1./906 was reformed as the 8./KG 26, exchanging its Heinkel He 115s for torpedo-carrying Junkers Ju 88 A-4s
3. General commanding Luftwaffe forces in Norway, at this time General Josef Kammhuber
4. Fliegerführer Lofoten - Air Commander Lofoten
5. The catapult ships most frequently used by the SAGr. 130 were the *Bussard* at Trondheim, the *Schwabenland* at Tromsø and the *Friesenland* at Billefjord
6. British name for the Grumman F4F Wildcat
7. Far behind the Russian front lines at the time of these missions
8. Monk's Island

Mounted on its beaching trolley, Arado Ar 95 A-1, 7R+DL of the 3/Aufklärungsgruppe (See) 125 is seen running-up its 880 hp BMW Dc radial engine at either Riga or List in the latter half of 1941.

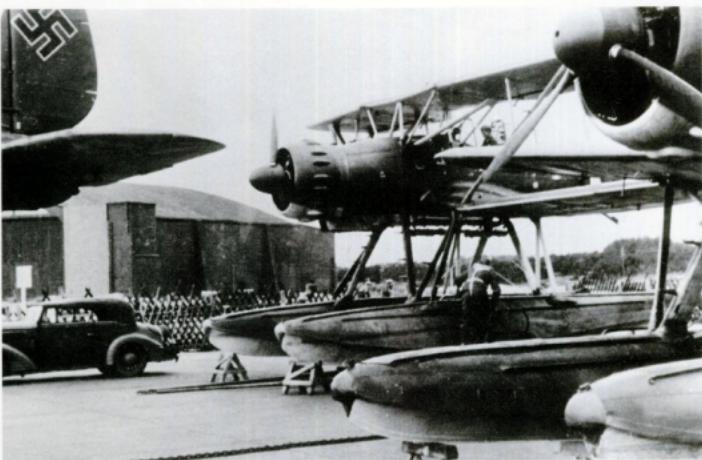


#### Arado Ar 95, 7R+DL

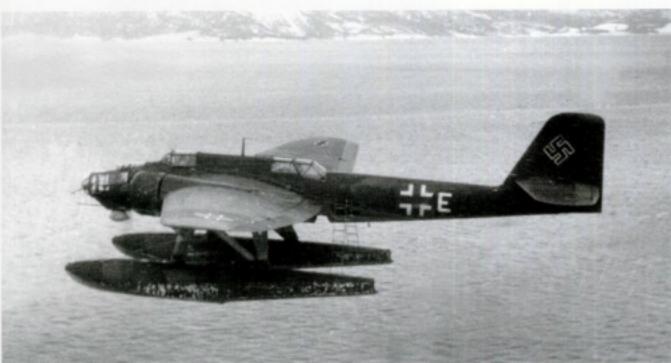
Finished in the standard maritime colours of 72/73/65, the aircraft carries its code letters in black with the aircraft letter 'D' painted in the Staffel colour of yellow while a narrow yellow theatre band has been applied to the fuselage in such a manner as to appear painted behind the Balkenkreuz. The spinner and propeller blades are 70 and the bumper pad at the forward tip of each float also appear to have been painted yellow.

1942-1945

A second view of some of the Arado Ar 95 A-1s of the 3./Aufklärungsgruppe (See) 125 at either Riga or List in late 1941. Initially under the control of the Fliegerführer Ostsee during the early stages of Operation Barbarossa, by early 1942 the Staffel had moved to Constanza, Romania, from where it operated under the control of Fliegerführer Süd. In early 1943, the Staffel moved to Varna, Bulgaria, on the Black Sea coast where it re-equipped with the three-engined Bv 138 seaplane. In July 1943, the Staffel was reformed as the 3./SAGr. 125 and remaining in the Black Sea, it operated under the Fliegerführer Schwarzes Meer until returning to List where it was disbanded on 5 September 1944.



*Below: Up from its base at Tromsø/Sareisa, Heinkel He 115 C, Kfz.EH, of the 1.KüflGr. 406 displaying a dulled and well-worn 12/73 finish, patrols along the Norwegian coastline during the early summer of 1942.*



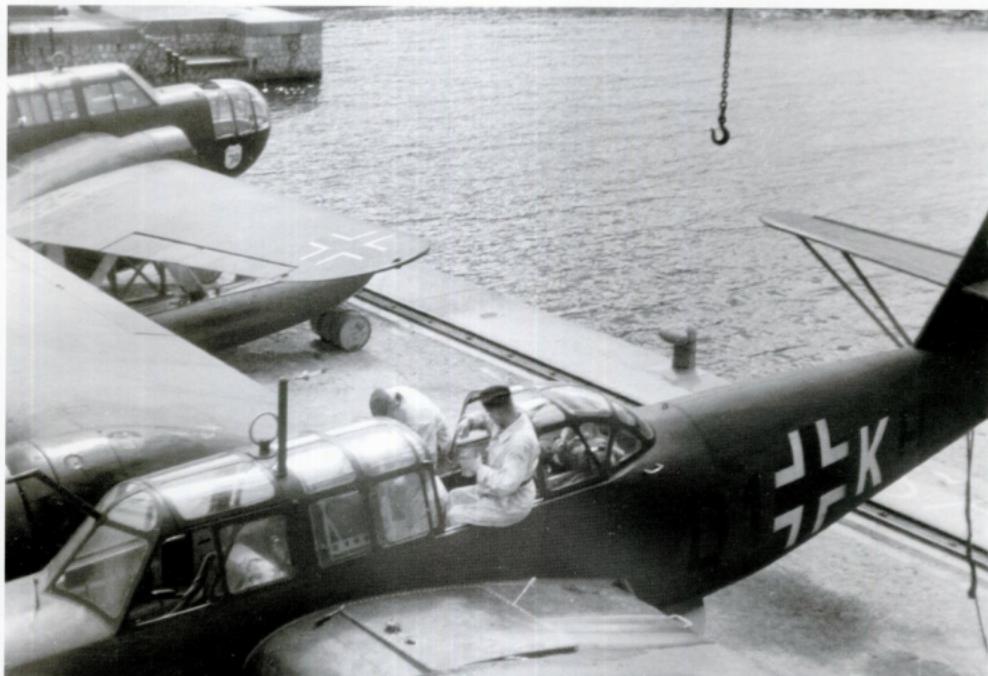
*A line-up of Heinkel He 60 Cs of the 1./SAGr. 126 taken at either Skaramanga or Volos in the eastern Mediterranean in mid-1942. Sporting white rudders and cowlings, each aircraft carried the unit emblem of a blue-coated boy with a telescope on each side of the forward fuselage.*



A close-up view of the blue-suited boy with telescope Staffel emblem of the 1./AufklGr(See) 126.



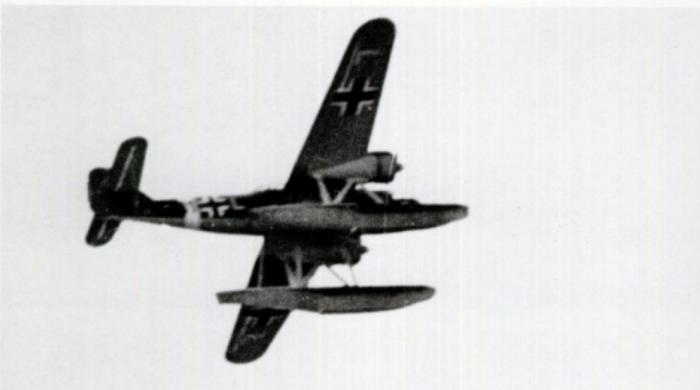
Seen on the quayside at Skaramanga alongside Heinkel He 60s of the Staffel in early 1942, captured Fokker T VIII floatplanes were assigned to the 1./Aufklärungsgruppe (See) 126 that made use of the type in the Eastern Mediterranean and Aegean Seas. In July 1943, it re-formed as the 2./SAGr. 127 but it is unclear how long the Fokker T VIIIs remained with the Staffel after this date.



1942-1945



These two views show a Fokker T.VIII, D1+LH of the 1./Aufk/Gr.(See) 126 airborne over Skaramanga or Volos in early 1942. Probably finished in the Luftwaffe maritime colours of 72/73/65, it carries a white theatre band around the aft fuselage and the Staffel emblem on the nose and the aircraft letter 'L' is painted in the Staffel colour of white and is repeated in the same colour beneath each wing.



Atlantic predator. A Focke-Wulf Fw 200 C-2, F8+EH of the Bordeaux-Mérignac based 1./KG 40 prowls the waters of the Atlantic searching for Allied shipping during mid-1942. As with its waterborne maritime counterparts it is finished in 72/73/65 with national markings displayed in eight locations, the only highlight to this otherwise drab scheme being the aircraft letter 'E' which is painted in the Staffel colour of white.

Focke-Wulf Fw 200 C-2, FB+CH, 'White C' of the 1./KG 40 is seen here parked between wood encased blast walls at its home base of Bordeaux-Mérignac during the late summer of 1942. Finished in a camouflage scheme of 72/73/85, it carries the well-known 'World in a Ring' emblem that reflected the nature of the units' long-range operations.



Junkers Ju 88 C-6s of the 1./ZG 1 provide close escort to a Focke-Wulf Fw 200 of KG 40 over the Bay of Biscay during 1943.



1942-1945



Blohm und Voss Bv 138 C-1 7R+DL of the 3./SAGr. 125 is shown here at its moorings at Varna, Bulgaria, in the late summer of 1943. Finished in the standard maritime camouflage of 72/73/65, the Staffel letter 'D' is yellow as are the under surfaces of the wing tips and a narrow white band is applied around each tail boom immediately forward of the fins. Formed from the 3./AufklGr.(See) 125 at Varna, Bulgaria, in July 1943, in company with the 1. Staffel, it carried out operations over the Black Sea under the control of the Aufklärungsführer Schwarzes Meer. In February 1944, the 1. and 3./125 moved to Mamaia, Bulgaria, where they remained until August before moving briefly to Thessaloniki in north-eastern Greece prior to transferring to List on the North Sea Island of Sylt where both Staffeln were disbanded on 5 September.

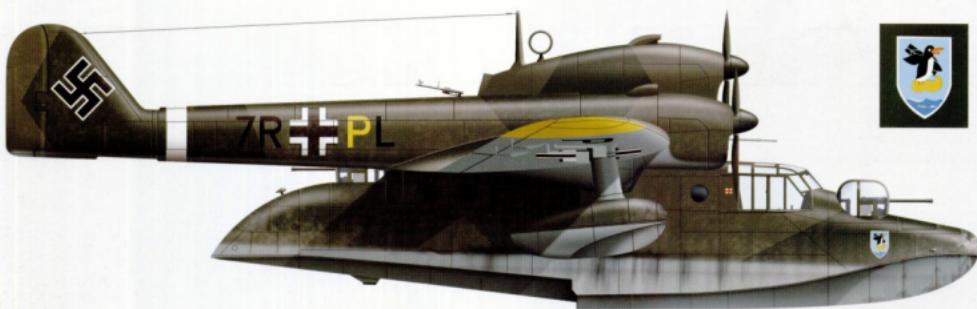


Two Blohm und Voss Bv 138s of the SAGr. 125 and a Dornier Do 24 of an unidentified Seenot unit are seen moored at Varna on the Black Sea coast during the summer of 1943.



A stern view of a Blohm und Voss Bv 138 C-1 of the 3./SAGr. 125 showing the twin defensive weapons stations, the lower, rear turret mounting a single MG 151 20 mm cannon and the upper open station, a 13 mm MG 131 heavy machine gun.

Blohm und Voss  
Bv 138 C-1 7R+PL of  
the 3./SAGr. 125  
photographed as it  
cruised above a placid  
and sun-drenched  
Black Sea during the  
summer of 1943.



#### **Blohm und Voss Bv 138 C-1, code 7R+PL, of 3./SAGr. 125**

The aircraft wore a standard maritime camouflage of 72/73/65 and carried a narrow white band around each tail boom immediately ahead of the fins. The lower surfaces of each wing tip were painted yellow, as was the individual aircraft letter 'P' while on each side of the bow beneath the turret was the Staffel emblem, which featured a light and dark blue shield containing a yellow-painted clog, which held a penguin carrying a dark-coloured bomb under its right wing.



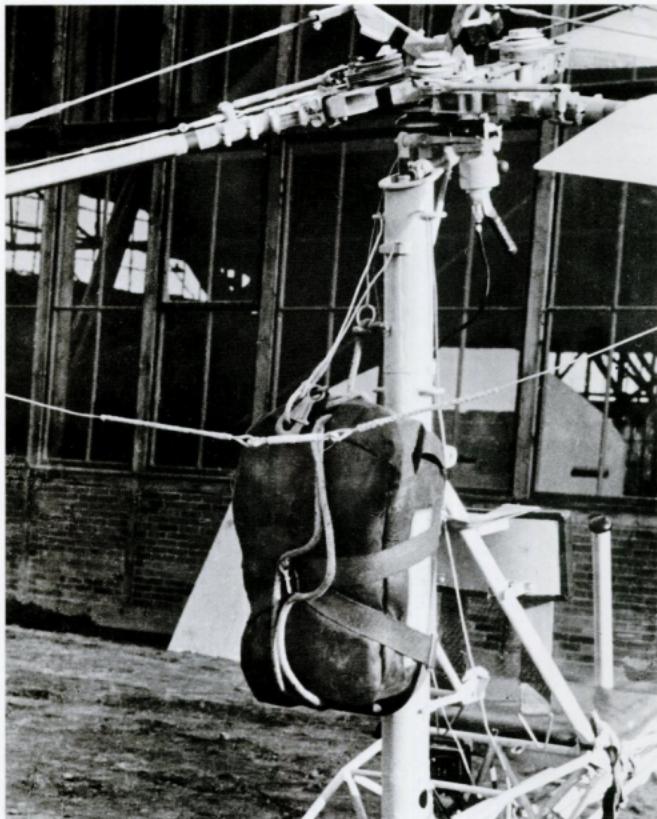
This frontal view of a Blohm und Voss Bv 138 C-1 of the 3./SAGr. 125 at Mamaia on the Black Sea coast gives a clear view of the bow-mounted turret, which, like its twin at the stern, mounts a 20 mm MG 151 cannon. The Bv 138s of the 3./125 would later play an important role in the evacuation of Kerch.

7R+HK, Arado Ar 196 A-3 of the 2./SAGr. 125 is seen here airborne from its base at Suda Bay, Crete, in the summer of 1943. In December 1943, it exchanged its Arados for Blohm und Voss Bv 138s and became the 4./SAGr. 126. It was disbanded at Mamaia in June 1944.

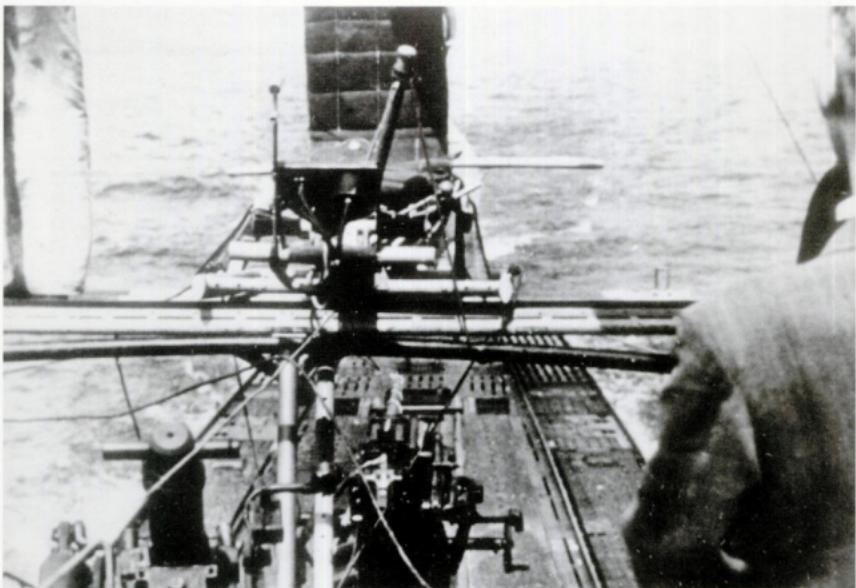




A close-up view showing the rotor mast, parachute pack and lower framework of a Focke-Achgelis Fa 330. In the event of an emergency, for example if the parent U-boat came under attack and needed to 'crash' dive, the pilot pulled a large red lever above the seat. This started a chain of events designed to save the submarine without sacrificing the pilot. The towline disconnected from the aircraft, freeing the submarine to dive immediately, and the spinning rotor simultaneously departed from the rotor mast. As the rotors flew up and away, they pulled a cable that deployed the pilot's parachute. When the parachute opened, the pilot released his seat harness and the remainder of the gyrocopter fell into the sea. After the submarine evaded the threat, it could return to pick up the pilot.



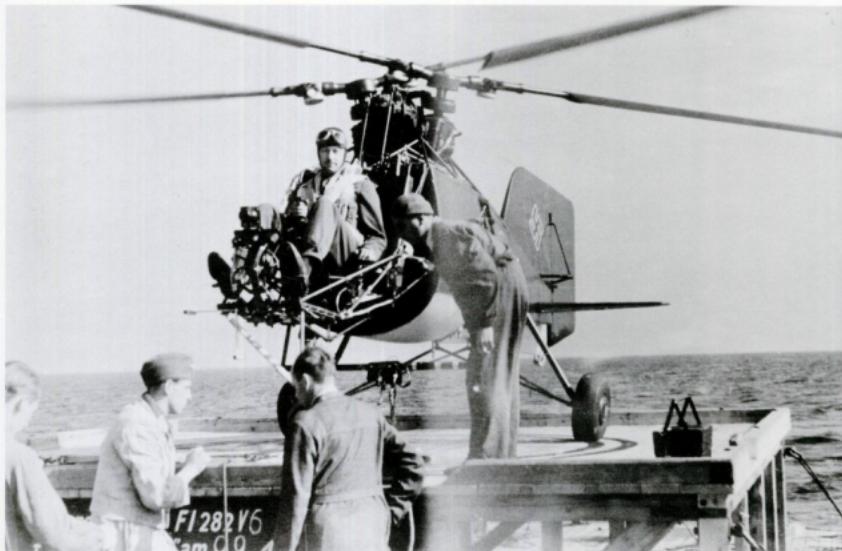
*It is said that war brings forth many innovative ideas and designs and in this respect, Germany was no different from the Allies. One such design was the Focke-Achgelis Fa 330 gyro-copter. Developed in 1942 for U-boat use and towed behind a surfaced boat, it extended the visual range of observation, its pilot maintaining contact with the boat by telephone. In all, some 200 examples were built, the major user being the Type IX U-boat. It is known for a fact to have been used operationally by U-861 during patrols in the Indian Ocean where it reached an altitude of 120 m (394 ft), thus extending the observable horizon to 40 km (25 miles) as opposed to the 8.5 km (5 miles) usually seen from a conning tower.*



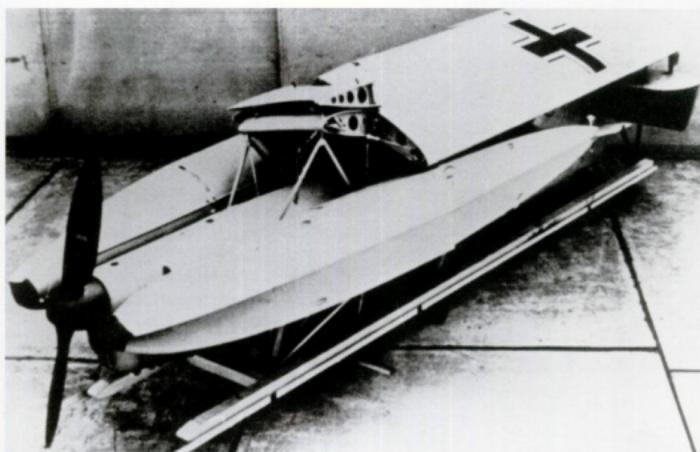
*A view of the controls of a Focke-Achgelis Fa 330 as it sits ready for use abaft the conning tower of a type IX U-boat.*



*A Focke-Achgelis Fa 330 seen undergoing trials on-board an unidentified U-boat.*

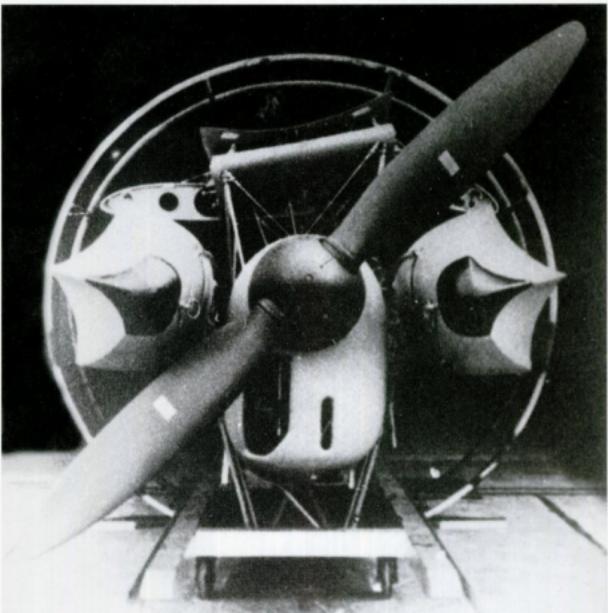


Following on from the very successful Flettner 285 helicopter, a second rotary-wing design that found a potential use by the Kriegsmarine was the Flettner Fl 282 Kolibri (Humming Bird). Powered by a 160 hp Bramo Sh 14A seven-cylinder air-cooled radial engine, it was designed from the start for observation and army cooperation use and was able to carry a crew of two: a pilot and an observer who was seated in a rearward facing seat behind the rotor shafts. In 1942, the Fl 282 V5 began a series of trials for the Kriegsmarine on board the tender 'Greif'. By 1943, some twenty Fl 282s had been built with some being used from the gunnery training ship Drache in the Mediterranean and Aegean Seas, often in extreme weather conditions. However, the potential of the design was never to be realised, as despite continuous demands from both the army and the navy, development and production were never adequately supported.



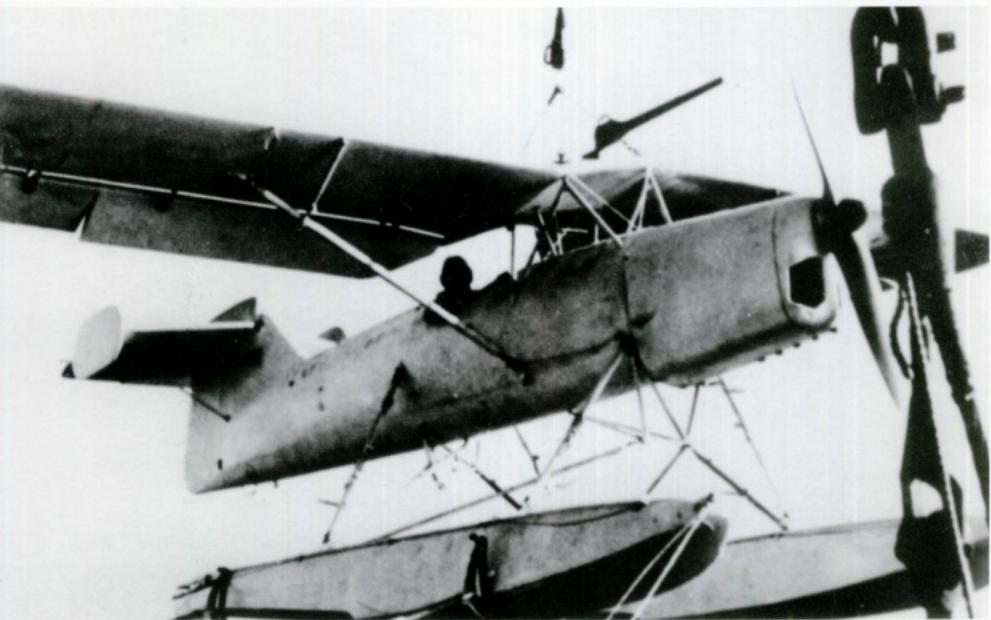
Yet another innovative maritime aviation project was the tiny Arado Ar 231, which was developed as a single-seat parasol-wing floatplane for use by U-boats to extend their observable horizon. Powered by a Hirth HM 501 six-cylinder engine, the aircraft could be erected or dismantled in about six minutes by an experienced crew. In its dismantled state, it was housed in a watertight cylinder some 2 m (6.5 ft) in diameter. A unique feature of this tiny aircraft was the angled wing centre section, which allowed the starboard wing to fold back under the port wing for stowage. Although a novel concept, handling problems in the air and on the water and the perceived vulnerability of a surfaced U-boat while launching or recovering the aircraft resulted in cancellation of the project shortly after the completion of the sixth prototype. This overhead view of an Arado Ar 231 shows its compact size once dismantled for stowage.

1942-1945



A head-on view of a dismantled Arado Ar 231 in its circular frame, ready to be inserted into its storage cylinder.

View of an unidentified Arado Ar 231 undergoing trials where the size of the pilot's head provides a useful indication to just how small this aircraft was. Although the identity of this particular aircraft and its location are unknown, it is entirely possible that it could be one of the two Ar 231s known to have been used by the German commerce raider 'Stier' before she was sunk on 27 September 1942.



A port side view of  
Arado Ar 231 V1,  
KK+BP taken during  
flight trials, which were  
believed held in the  
Baltic during 1941.  
While the national  
insignia is black and  
white and the  
Stammkennzeichen  
black, it is thought that  
this particular example  
was finished in  
overall 02.



During a long-range  
reconnaissance sortie  
over the Bay of Biscay  
on 31 July 1944, this  
Junkers Ju 88 H-1 of  
the 3.(F)/123 attracted  
the attention of a  
Mosquito of 248  
Squadron RAF, but try  
as he might, pilot  
Fw. Paul Gruner failed  
to shake his pursuer  
and died with his crew  
when the Junkers was  
shot down into the Bay.



It is unusual to find photographs of both sides of an operational example of a Focke-Wulf Fw 200. These two photographs give port and starboard side views of Fw 200 C-8, F8+FR of the 7./KG 40 which was captured in Norway in 1945 and is the subject of the colour profile below.



### Focke-Wulf Fw 200 C-8, code F8+FR

The aircraft was finished in the standard upper maritime colours of 72 and 73. However, along the sides of the fuselage, fin and, engine cowlings, this was later adapted by the application of a randomly applied mottle, heavy in places, of a light colour such as white or pale grey, presumably for operations over northern waters. As shown in the accompanying photographs, this pale colour did not extend to the tops of the flying surfaces. The fuselage codes are black with the aircraft letter 'F' possibly outlined in the Staffel colour of yellow. Uncommonly for the type, the F8 unit code has been applied in the small, mid-1943 style.



# A Brief History of the 3./Aufklärungsgruppe 33

**T**he Staffel was formed under the command of Hauptmann Heinrich-Peter Gehrken at Kassel-Rothwesten between March and June 1941 with experienced flying personnel drawn from front line units in Norway, elements of the Aufklärungsgruppe (F) 22 and a number of newly trained but untried crews from the Ergänzungs-Aufklärungsstaffel Weimar-Nohra. During May, the ground personnel moved by train to Schippenbeil, East Prussia, where their aircraft and flying personnel joined them on 4 June. The aircraft were all new Junkers Ju 88s carrying the code of 8H, Staffel letter L with the individual aircraft letters usually, the tips of the spinners, usually painted in the Staffel colour of yellow. Later, each aircraft would carry the Staffel emblem of a black 'Siegrune' (Victory Rune – often referred to by Staffel members as the 'Knochen' or 'bone'), designed by Lt. Günther Röwert, on a black-bordered white disc on the side of the nose.

Assigned to operate under the *Koluf 17. Armee* within *Heeresgruppe A*<sup>1</sup>, the Staffel saw its first aircraft casualty on 20 June when Ju 88 A-5(F), W.Nr. 742 sustained 30 per cent damage in a forced-landing at Schippenbeil. Four days later on 24 June, just two days after the onset of Operation Barbarossa, the Staffel flew its first operational wartime mission when Junkers Ju 88 D, 8H+HL, crewed by Fw. Hild, Obit. Rührschnick, Uffz. Stender and Gefr. Dickhäuser carried out an early morning reconnaissance sortie. Later that same day, two further missions were flown and on 27 June, the Staffel suffered its first combat loss when Junkers Ju 88 A-5(F) 8H+FL, W.Nr. 0740, failed to return from a reconnaissance sortie with Lt.Dr. Robert Gymich and crew posted as missing in the area of Polz-Pskow.

On 19 July, the same day that the Staffel moved to Beresina, Ju 88 A-5(F), W.Nr. 739 failed to return from an operational sortie with Lt. Hans-Joachim Hinrichs and crew posted as missing. Two days later another aircraft was lost when Ju 88 D-2, W.Nr. 798, 8H+DL failed to return from a sortie to the

Bobruisk (Babruysk) area with Lt. Ernst Grund and crew reported killed.

After a brief stay at Beresina, the Staffel then moved on to Borisov where it stayed until transferring to Vitebsk at the beginning of September and where they would remain until early the following year. During the winter of 1941-42, the majority of the ground personnel, along with the light Flak unit assigned to the Staffel, were detached and employed in an infantry role in the areas of Wjasma and Smolensk. In February 1942,

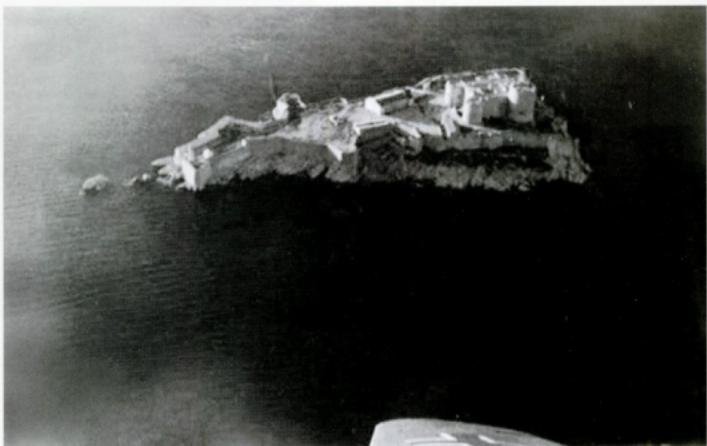
Junkers Ju 88 D-2, 8H+RL pictured at either Beresina or Borisov on the Eastern Front during the summer of 1942. Finished in the standard camouflage of 70/71/65, it carries a yellow theatre band around the tail and the tips of the spinners are in the Staffel colour of yellow. The Staffel emblem on the nose is a black-bordered white disc containing a stylised black 'Siegrune'.



after losing nine aircraft with eight of their crews listed as killed or missing and a further nine of their aircraft damaged, the Staffel left Russia, moving first to Le Culot in Belgium before transferring to Paris-Orly in May where they were later rejoined by their surviving ground and Flak personnel from Russia. Now under the control of General Joachim Coeler's IX. Fliegerkorps within Luftflotte 3, the Staffel, under the command of Hptm. Hans-Ulrich Michael, remained at Paris-Orly until November, during which time reconnaissance missions were flown over western areas of the North Sea and eastern and south-eastern England with sorties often flown from airfields in Holland and other regions of France.

After losing seven of their aircraft during the preceding months and with a further seven damaged, in late November 1942, the Staffel was moved to Bordeaux where it remained for 14 days before transferring to Montpellier on the south-eastern Mediterranean coast of France. Now under the command of Major Freiherr Michael von Buttler, reconnaissance sorties were flown over the western Mediterranean between the south coast of France, Corsica, Sardinia, Gibraltar and North Africa. Also

1942-1945



*The Chateau d'If off Marseille as seen from the radio operator's position of a Junkers Ju 88 D-2 of the 3.(F)/33 – but neither Edmond Daniels nor his mentor, Abbé Faria are anywhere to be seen! This photograph is one of several taken of the island and chateau by radio operator Hans-Günter Mantel during a sortie from Montpellier circa May-June 1943. The tip of the starboard wing and Balkenkreuz are visible at the bottom of the photo.*

at this time, the *Staffel* practised anti-submarine operations using depth charges and, some of the Ju 88s would carry these during their regular sorties. The *Staffel* remained at Montpellier until the end of June 1943 when it transferred to Ottana, Sardinia, from where missions, ranging from three to six hours duration, were flown to Malta, Gibraltar, and along the North African coast. It was also at Ottana that, in addition to its high mission losses, the *Staffel* lost four of its Junkers Ju 88 D-1s, W.Nr. 1425, 1433, 430284 and 430850 to an Allied sabotage operation on the night of 11/12 July.

In August 1943, the *Staffel*, under the command of *Hptm.* Westphal, moved to Frosinone in central Italy from where during its stay, four of its Ju 88s were lost. One was during a detachment to Villacoublay, two to enemy action – one of which was crewed by personnel from the 2.(F)/122 – and one during a low-level sortie after it accidentally hit the surface of the Mediterranean, the crew later being rescued and taken prisoner. Later, the *Staffel* moved north to Forlì some 67 km (42 mls) to the south-east of Bologna, during which time *Oblt.* Hans Bayer<sup>2</sup> took over as *Staffelkapitän*. In December, the *Staffel* transferred to Königsberg-Devau in East Prussia to undergo conversion on the Junkers Ju 188.

*These two photos of the 'Prinz Eugen' were taken by observer Bernard Mauve from the nose position of a Junkers Ju 188 while the Staffel was exercising with the ship in the Baltic during its conversion from the Junkers Ju 88 at Königsberg-Devau in early 1944.*





Above and above right:  
Two views taken of  
observer Lt. Helms  
(standing in the  
starboard side of the  
roof hatch), his crew,  
and their damaged  
Junkers Ju 188 at the  
end of the 1000th  
mission when, because  
of damage sustained to  
the aircraft during the  
sortie, the pilot,

Lt. Beyer had little  
option other than to  
force-land the aircraft  
at Athens-Kalamaki.  
Interestingly, this  
particular Ju 188 is  
fitted for a nose-  
mounted MG 151  
20 mm cannon, a  
weapon rarely carried  
by reconnaissance  
Ju 188s. Unfortunately  
for the crew, their  
relief was to be short-  
lived, as they would all  
be killed the following  
week when, on 12 April  
1944, their Ju 188,  
8H+KL, crashed into  
the harbour at Piraeus.



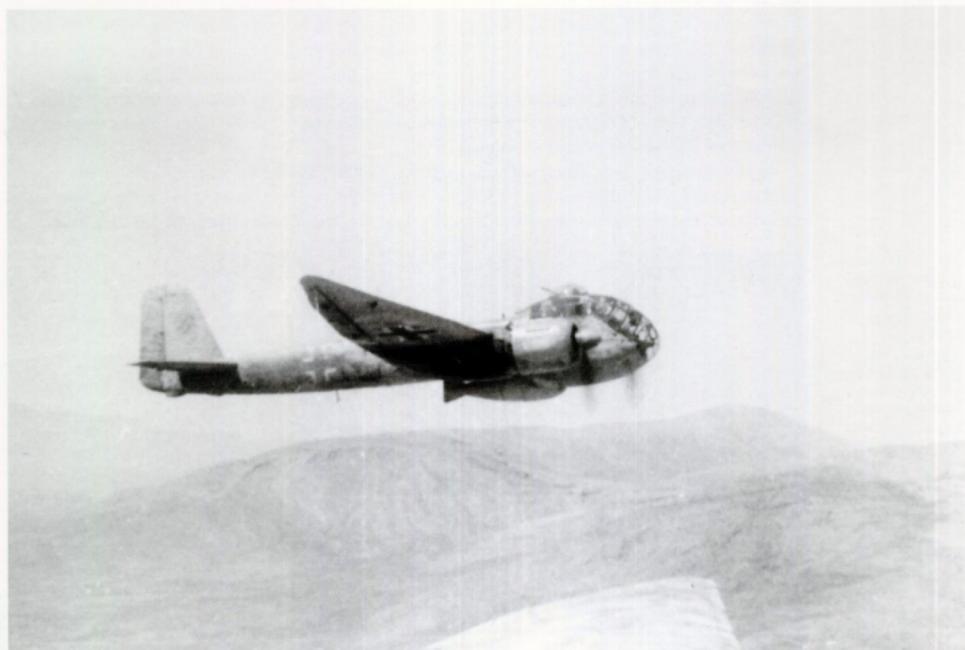
The 1000th mission  
crew pose in front of a  
Kubelwagen and a  
FuG 200-equipped  
Junkers Ju 188 of the  
Staffel at Athens-  
Kalamaki in April 1944.  
Identified in this  
photograph are from  
left to right: gunner  
Uffz. Siebert, radio  
operator Uffz. Bergholz  
and pilot Lt. Beyer.



A FuG 200-equipped Junkers Ju 188 sits in a low-walled revetment at Athens-Kalamaki some time in April 1944. Given the position of the Kubelwagen and group of personnel in front of the aircraft, it was probably taken by the same revetment and on the same date as the above photograph of Lt. Beyer, Uffz. Siebert and Uffz. Bergholz. As with most of the Ju 188s used by the Staffel in the eastern Mediterranean, this aircraft has had a locally formulated overspray of lightened blue 65 applied over the base upper camouflage of 70/71 to adapt it for over-water operations. Often heavily applied, this overspray frequently obscured the national markings and unit codes although usually, the individual aircraft letter remained visible. Unlike several other aircraft of the Staffel, this example lacks the so-called Spiralschnauze design on its spinners.



Two views of an unidentified Junkers Ju 188 of the 3.(F)/33 joining up with a second Ju 188 over Athens before setting off on a sortie to Nicosia, Cyprus, in mid-1944. In view of the distance the sortie would cover, the Ju 188 carries a long-range tank attached to the ETC carrier under the inboard section of its port wing.



With this conversion training completed, the Staffel returned to the eastern Mediterranean in March 1944 and took up residence at Athens-Kalamaki in southern Greece from where missions were flown over Italy, Cyprus, Malta, Haifa, the Suez Canal and Alexandria. Less than a month later, a Junkers Ju 188 crewed by Lt. Bayer, Lt. Helms, Uffz. Bergholz and Uffz. Siebert completed the 1000th mission flown by the Staffel. At the end of the mission, Lt. Bayer had to force-land their aircraft at Athens-Kalamaki, due to damage sustained during the sortie. One week later, on 12 April, the Staffel lost its first Junkers Ju 188 when 8H+KL, manned by this same crew, crashed into the harbour at the port of Piraeus. Although the aircraft was later recovered, the entire crew was killed in the crash.

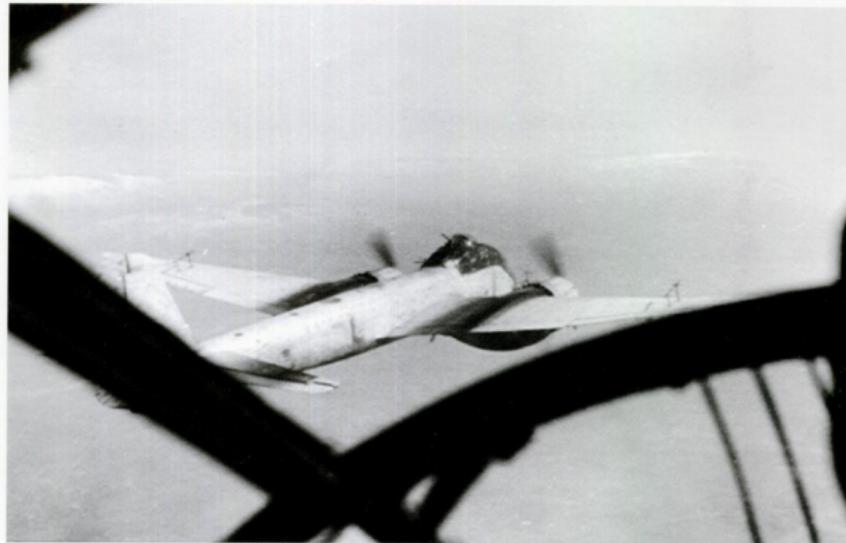
*One of a series of photographs taken of Junkers Ju 188 F-1 8H+EL lodged on the rocky foreshore of the island of Kefalonia on 28 July 1944. This view clearly shows the pale blue overspray applied to the upper surfaces of the aircraft, which has almost completely obscured the upper wing Balkenkreuze. Interestingly, both spinners of the aircraft were decorated with a tightly applied white Spiralschmaue, a marking that became increasingly common on reconnaissance aircraft in 1944.*



On 28 July, Kaspar Kähn and his crew were on a sortie to Malta when their aircraft, Junkers Ju 188 F-1, 8H+EL, was attacked by two Spitfires which, after seriously damaging the port engine, flew away. In attempting to nurse the crippled aircraft back to safety, it became clear to Lt. Kahn that it was unlikely to stay in the air for very long and he was eventually forced to ditch the aircraft in the sea off the Ionian island of Kefalonia. Fortunately for the crew, the aircraft remained afloat and was carried towards the shore where it became lodged on the rocky foreshore. Kaspar Kähn and his crew of Unteroffiziere,<sup>3</sup> Erwin Gruber, Walter and Fisher would remain on the island for two weeks before finally making their way back to Athens-Kalamaki.

In late 1944, the flying personnel strength of the *Staffel* was reinforced by crews from the Athens-Tatoi based 2.(F)/123 which had lost a number of its aircraft in Allied bombing raids. During this same period in which the *Staffel* began receiving the first of a number of the faster T-1 and T-3 variants of

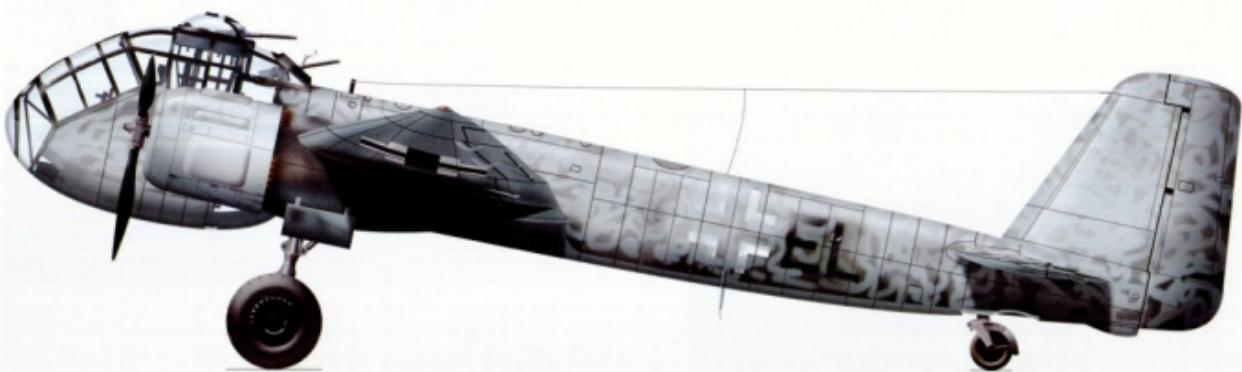
*Taken from the cockpit of an accompanying Junkers Ju 188 during a return flight to Kalamaki in the summer of 1944, it can be seen how the heavy exhaust staining extending back over the wings and tail plane from the BMW engines of aircraft 'L' compromises its pale blue camouflage. Also visible in this view are the starboard and wing mounted antennae of the FuG 200 'Hohentwiel' radar.*





While on a sortie to Cape Otranto, Cape Spartivento and Catania harbour on 24 May 1944, the port engine of Junkers Ju 188 8H+EL was hit by anti-aircraft fire from the harbour defences, putting it out of action and leaving its crew to face a lengthy single-engined over-water flight to the safety of their home airfield at Athens-Kalamaki. Making the return flight at an altitude of little more than 300 m in the crippled aircraft was met to the west of the Gulf of Corinth by a Seafire flying boat which accompanied the Ju 188 until it landed safely at Kalamaki after a 2500 km round-trip. The accompanying two photographs of the crippled Ju 188 were taken on its approach into Kalamaki and its subsequent safe landing.

The crew of Junkers Ju 188 8H+EL after being welcomed back to Kalamaki following their low-level, single-engined return flight from Catania. Left to right: Werner Höchst, Werner Beier, Uffz. Gruber and Günter Mantel.



#### Junkers Ju 188, code 8H+EL, of 3.(F)/33

This aircraft wore a standard bomber camouflage scheme of a segmented upper pattern of 70 and 71 over 65 under surfaces. In order to better conceal the aircraft for over-water missions, a haphazard mottle of 65 was applied over all upper surfaces, excluding the canopy framework, which remained in its original colour. Applied at unit level, the pattern and shade of the mottle varied considerably from blue to bluish white and largely obscured all upper surface national and unit markings except for the individual aircraft letter, which usually only received a light overspray. Propeller blades were 70 with dull metal hubs and no spinners were fitted to the aircraft at this time.



*Two views of Staffel mechanics working on BMW 801 engines in the open at Athens-Kalamaki in the summer of 1944. In the first, an engine is made ready for removal from an airframe, while in the second a mechanic adjusts the ancillary equipment at the rear of a BMW 801. Visible in the second photograph are the 'shaving brush' exhaust flame dampers that were usually fitted to BMW engines for nocturnal operations.*



1942-1945

*How low can you go?*  
Two photographs of a Junkers Ju 188 of the 3.(F)/33 as it makes a low-level run across the beach near Kalamaki on returning from a successful sortie. A customary Staffel practice carried out on a regular basis, they were frequently the subject of photo shoots by Bildstelle and other interested personnel. A close inspection of the photographs shows that in common with many other Ju 188s of the Staffel, no spinners are fitted over the propeller hubs.





**The Junkers**  
Ju 188 D-1 or D-2 of  
Fw. Werner Ebertz, a  
pilot with the 2.(F)/123  
who joined the 3.(F)/33  
in late 1944, has  
buried its nose into the  
soft ground beneath a  
thinly frozen surface  
while landing at an  
airstrip in the area of  
Steinamanger in  
western Hungary in  
the late winter of 1944.

A so-called  
'Wellenmuster' pattern  
of pale grey or blue is  
applied in a random  
fashion over the upper  
surface 70/71 and the  
W.Nr. is applied in  
white across lower  
area of the fin/rudder  
assembly. While the  
last three digits of the  
W.Nr. are 433, the first  
three, although less  
clear, appear to be  
239.



1942-1945



*Staffel personnel pose beneath one of the flame damper-equipped Junkers Ju 88 T-3 machines used by the 3.(Fl)33 for night missions from an airfield in western Hungary during the winter of 1944. While the under surfaces of the fuselage, wings and spinners are painted black, the lower cowlings appear to have been left in either 65 or 76. However, based on what little of the upper camouflage is visible on the engine cowling, it is believed that the 70/71 upper surfaces of the aircraft were overpainted in random areas of white while leaving narrow areas of the original colours between them to break up the outline of the aircraft.*

the Junkers Ju 88, its aircraft and crews moved first to Steinamanger (Szombathely) in western Hungary and then to Pleso, some 14 km (8.5 miles) south-east of the Croatian city of Agram (Zagreb). In the meantime, the *Staffel* ground personnel, having departed from Athens on 19 September, journeyed northwards for just over three months before reuniting with the remainder of the *Staffel* at Pleso on 21 December.

From Pleso, the *Staffel* flew sorties over Italy and the Adriatic but now, not only had it to deal with increasing Allied fighter patrols but also with continuing partisan activities around the airfield. During its stay at Pleso, one aircraft loss was Junkers Ju 188 D-2, W.Nr. 150536, shot down not far from the airfield on 18 December. The only survivor from Lt. Franz Krattenmacher's crew of five was one of the gunners, Ofw. Otto Karowski who, after baling out of the stricken aircraft over a strongly-held partisan area was rescued by a special detachment of *Staffel* personnel.

At the end of January 1945 and now under the command of Hptm. Christian Jährig, the *Staffel* moved to a small airstrip at Sorokufalú near Steinamanger from where, during February and March and flying from either of these two locations, as with its first operational missions, the last wartime sorties by the *Staffel* were flown against Russian forces.

On 25 March 1945, the *Staffel* was ordered to retreat, first to the airfields at Götzendorf and Markersdorf in Austria before continuing on until it reached Kirchham in north-eastern Bavaria on 9 April 1945 where their remaining aircraft were destroyed during an American air raid shortly after its arrival. Now without aircraft, most of the remaining crews and ground personnel were distributed amongst other *Staffeln* or, as with the ground and Flak personnel earlier in Russia, were sent to ground defence units.

However, the story of the *Staffel* did not end in Bavaria, but on 5 May with crews transferring from Linz-Hörsching to Klagenfurt in twin-engined Siebel Si 204s, during which one of the aircraft carrying the code S3+XC disappeared. Although *Staffel* personnel who had already arrived at Klagenfurt waited until darkness for the missing aircraft and their comrades to arrive, it was not until the following morning that they discovered that it had flown into the side of a nearby mountain, killing everyone on board.

<sup>1</sup> Army Group A, renamed Heeresgruppe Süd on 22 June 1941

<sup>2</sup> Awarded the Ritterkreuz on 1 May 1945

<sup>3</sup> Non-commissioned officers

## Fernaufklärungsstaffel 5./123 at St. Pol, France - Early 1943

Formed at St. Pol, France, in November 1942, the 5.(F)/123 flew various sub-variants of the Fw 190 A and Messerschmitt Bf 109 G aircraft in the reconnaissance role throughout North-West Europe from its formation until late 1944. In July 1943, the *Staffel* moved from St. Pol to Monchy-Breton in the northern area of the Pas de Calais, remaining there until August 1944 when it moved south-eastwards to Dijon. After a brief stay of less than a month at Dijon, the *Staffel* was soon on the move again, this time to Hagenau in Alsace-Lorraine where, after another brief stay, it moved to its final wartime station at Buer near Gelsenkirchen, Germany, where it remained until disbanding in October 1944.

The photographs on this and the following pages originated from a former member of the *Staffel* but unfortunately, specific dates and locations were not identified although recent information has provided a strong suggestion that they were taken at St. Pol during the spring of 1943.



*Staffel* personnel of the 5.(F)/123 manhandle a Messerschmitt Bf 109 G-4/R3 of the 5.(F)/123 over what appears to be a soggy section of the airfield at St. Pol early in 1943. Just visible on the lower fuselage is the ventral camera window and fairing.



An unidentified Messerschmitt Bf 109 G-4/R3 of the 5.(F)/123 taxis past the camera at the St. Pol airfield in the spring of 1943. Finished in the standard day fighter camouflage of 74/75/76 with a dense mottling of 74/75 along the fuselage sides, the spinner is painted either in black or 70, and while the rudder appears to be yellow, it is impossible to determine whether this required colour has been applied to the lower cowling.

1942-1945

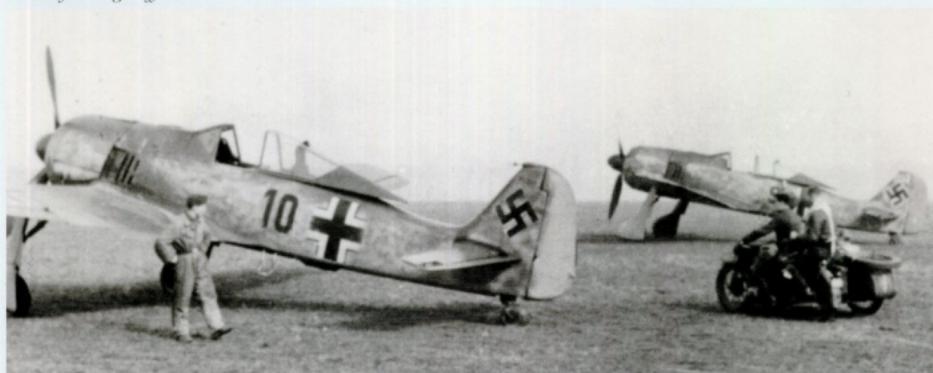


*Two photographs of the activity immediately prior to a sortie from St. Pol in the spring of 1943. In the first photograph, ground crew of the 5.(F)/123 prepare a Messerschmitt Bf 109 G-4/R3 for flight; while in the second the pilot warms up the Daimler-Benz engine of the Bf 109 prior to taxiing out for take-off. As with the majority of reconnaissance Bf 109s, this aircraft is finished in the standard day fighter scheme with a black or 70 painted spinner while both the rudder and lower engine cowling are painted yellow.*



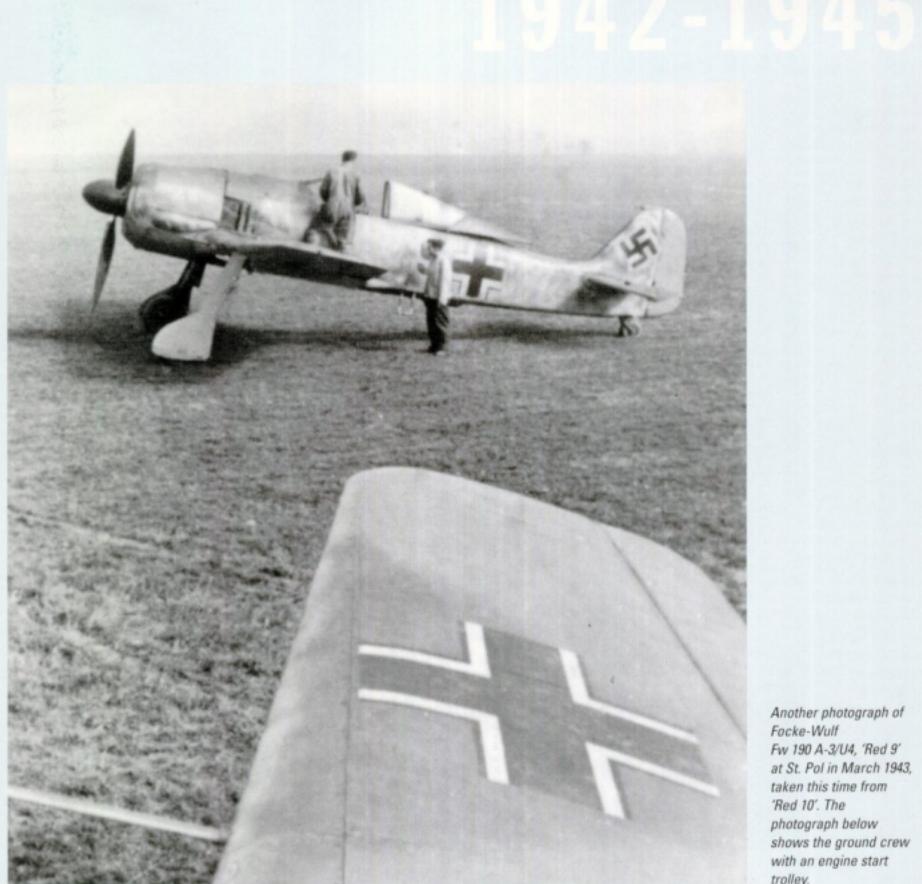
*This head-on view of Staffel personnel at work on a Focke-Wulf Fw 190 A-3 or A-4 of the 5.(F)/123 clearly shows the random application of two separate colours along the demarcation line between the upper and lower camouflage colours along the leading edges of the main wings. Believed to have been applied to break up the outline of the aircraft when viewed from head-on at low level, it is quite likely that the colours used were 74 and 75 or perhaps 74 and 02. Also visible is the lower engine cowling, which is painted yellow.*

Fernaufklärungsstaffel 5./123 continued.



These five views of Focke-Wulf Fw 190 A-3/U4, W.Nr. 35346 'Red 9' and 'Red 10' are known to have been taken at St. Pol prior to 13 March 1943 because on that day Fw. Oskar Sahre failed to return from a sortie in this machine. Like its contemporaries, 'Red 9' was finished in 74/75/76 with the rudder and lower engine cowling painted yellow. In the first of these five photographs, the pilots arrive at their aircraft in a Zundapp motorcycle combination and in the second, third and fourth, ground crew assist the pilots of 'Red 9' and 'Red 10' with their flying gear and getting into their aircraft. In the fifth photo, the ground crew have connected a starter trolley to the external 24-volt power supply socket as the pilot of 'Red 9', perhaps Oskar Sahre, prepares to start the BMW engine of his aircraft.





Another photograph of  
Focke-Wulf  
Fw 190 A-3/U4, 'Red 9'  
at St. Pol in March 1943,  
taken this time from  
'Red 10'. The  
photograph below  
shows the ground crew  
with an engine start  
trolley.



*Fernaufklärungsstaffel 5./123 continued.*

Taken on the same day as the preceding five photographs, in this view in which Focke-Wulf Fw 190 A-3/U4 'Red 10' begins its take-off run at St. Pol, the camera fairing in the lower fuselage may clearly be seen beneath the fuselage Balkenkreuz.



Probably having just returned to St. Pol from a sortie, the pilot of a stationary Focke-Wulf Fw 190 A-3/U4 is seen here in conversation with a fellow pilot while a ground crewmember checks the wheels of his aircraft. Again, the camera aperture fairing beneath the rear fuselage is evident.



An interesting low-angle view of Focke-Wulf Fw 190 A-3 'Red 8' parked at readiness at St. Pol in the spring of 1943 with the pilot's parachute sitting ready for use on the port tailplane. As with the Bf 109s of the Staffel, it is finished in a standard 74/75/76 scheme with a yellow painted rudder and, presumably, lower engine cowling. Although visible at the top of the fin, the Werknummer is unfortunately, indecipherable.



1942-1945



Ground crew prepare to start Messerschmitt Bf 109 G-4/R3, Blue '4' of the 4.(F)/123 prior to a sortie from either Guyancourt or Charleville during the summer of 1944. Visible in this photo, the aircraft is fitted with the later solid cast hubs for its larger 660 x 160 mm main tyres and the rearmost of the two small cowling scoops to provide cooling air for the spark plugs and exhaust manifolds has been cut back – possibly to provide for better air flow.



With its Daimler-Benz engine started and warmed up, Bf 109 G-4/R3 Blue '4' taxis out from its concealed dispersal point in the French countryside. Visible in these two views are the canopy-mounted rear-view mirror and kidney shaped bulges on the inboard tops of the wings to accommodate the larger main undercarriage tyres. These were the first of the bulged fairings to appear on the Bf 109 and resulted in the nickname 'Beule' (Bump) that remained with the Bf 109 throughout the rest of its operational career.



#### Messerschmitt Bf 109 G-4/R3, 'Blue 4', of 4.(F)/123

The aircraft was finished in the day fighter scheme of 74/75/76 with a sparsely applied mottle of the greys 74 and 75 along the 76-painted sides of the fuselage and fin/rudder assembly but the mottle did not extend to the forward engine cowling panel. Evidence of a large area of grey repainting behind and below the figure '4' suggests that the aircraft may previously have been marked differently. The propeller blades, like the spinner, were finished in 70.

## Our Last Operational Flight - 5 September 1943



*Josef 'Sepp' Lisinski.*

As related by Georg Kalbling with additional material provided by Josef 'Sepp' Lisinski, formerly of the 3.(F)/33.

**A**t the time of the following incident, for about three weeks we had been living in tents in a vineyard near Frosinone airfield. After my former pilot Werner Beyer, together with gunner *Oflv.* Ubachs crashed in Sicily, I was without a crew but it was anticipated that in the future I would form a crew with my friend Erwin Haspel, and my long-time radio operator and friend, Günter Mantel. At this time, a gunner had not been selected for our crew but as both Erwin and Günter were suffering from a bout of malaria, for the time being, I remained without a crew.

Because of the high losses in aircraft and their crews that we were suffering in the Mediterranean theatre, the replacements, which were arriving from Germany at this time, included a pilot, *Uffz.* Hermann Müller and gunner *Uffz.* Heinz Stolte. They had been with us for only three days when our *Staffelkapitän*, *Hptm.* Westphal chose me to fly with them on their first operational flight. When I asked who would be the radio operator I was told that as *Uffz.* Josef 'Sepp' Lisinski was also without a crew, he would be joining us for this flight.

Our mission, a sea reconnaissance sortie covering the convoy corridor from Oran to Phillipsville (Algeria) was well-known to the crews and required only a short briefing. After the briefing, we went out on to the airfield where our aircraft, Junkers Ju 88 D-1, W.Nr. 430854 coded 8H+IL, was already waiting for us. The day, Sunday, was beautiful with a cloudless sky and soon after taking off we could see the coast on the horizon with the blue Tyrrhenian Sea beyond.

We were flying quite low at an altitude of between 300 to 400 m (980 to 1,300 ft) and as a last visual reference, I choose the southern tip of Sicily. Everything was working fine, including the radio contact with Frosinone airfield. The closer we came to our operational area, the lower we had to fly and first descended to some 50-80 m (160-260 ft) above the surface of the sea and, because of the possibility of being intercepted by Allied listening and radar services, I ordered Sepp Lisinski to cut our radio contact with Frosinone.

As we got nearer to the convoy corridor we flew even closer to the surface of the sea and after a short time, we could hear a knocking sound in our headphones, a clear indication that we had been picked up by Allied radar and it was tracking us. As Hermann Müller eased the aircraft even lower to about 30 m (approximately 98 ft) above the sea to avoid the radar he was faced with a problem; our low height produced a 'bow-wave' disturbance that made the aircraft difficult to handle. When he increased altitude, we would hear the knocking sound again. This continued for a while as we flew along the corridor in a zigzag pattern and at any moment, we expected Allied fighters to appear.

Because of the 'bow-wave' problem mentioned earlier, and because he did not trust using the autopilot at such low altitude, it was difficult for Müller to maintain control of the aircraft. As each leg of the our zigzag course required a turn at the end, he did not feel safe in making the turns at low-altitude so he would climb the aircraft for each turn and again we would hear the knocking sound. As Müller eased the aircraft lower after one of these turns the propeller on the starboard engine hit the surface of the sea; as this happened, there was a loud bang and bits of the broken propeller shattered parts of the cockpit canopy, causing a massive draught. It was clear that we would have to ditch and almost immediately, Heinz Stolte released the roof of the cockpit as Sepp tried to release the large dinghy while my immediate thought was 'Müller, land with the tail down!' It was exactly 11.57 hrs and Hermann Müller made a perfect emergency landing on the water with the 'old' Ju.

When I reached the surface, or to be more precise, escaped from the sinking aircraft, I only saw the tail of the aircraft and Sepp and Stolte on the surface. Suddenly, I was pulled under the water. I was

overcome by panic and threw my arms around, and tore off my flying helmet, which had slipped to the back of my head, and then I was able to resurface again. The cable of my flying helmet was still connected to the radio system of the sinking aircraft; it was this, which had dragged me back under the water.

As I resurfaced, I saw Müller next to me in the water. He was still wearing his seat parachute and it remains a mystery to me how he was able to free himself from the small cockpit. Floundering around in the sea, we disconnected our one-man dinghies and opened the oxygen bottles to inflate them; however, Müller's oxygen bottle failed and he had to inflate his dinghy by mouth. Entering the dinghies was not easy, but after considerable effort, we all got into them. Still using his mouth, Müller continued to inflate his dinghy as far as possible. Unfortunately, the large dinghy stored in the back of the aircraft had not released itself because the oxygen bottles probably had emptied themselves and although we had only received the one-man dinghies 14 days before this fateful flight, they were instrumental in the saving of our lives.

Around us, the surface of the sea was as smooth as a mirror and there was not a cloud to be seen. Neither ships nor land was in sight and no enemy aircraft came into view during the day. The day passed and turned into night. It was nice that the water was very warm because the air had cooled considerably. At about 00:30 hrs, we heard a humming sound that sounded like an engine. Both Müller and Stolte had attended a navy-training course in the Ostsee (Baltic Sea) during which they had cooperated with submarines and recognized the sound as that of a German U-Boat that had surfaced to recharge its batteries during the night.

Unfortunately, we did not have a signal pistol and were not able to make our presence known. I fired several rounds with my pistol, but the muzzle flash was not strong enough to be noticed over a large distance. The humming continued for about another two hours and then silence returned over our small area of the sea.

Until dawn, when the sun came up like a big red ball of fire, nothing happened. A few seagulls flew nearby and large tuna fish swimming beneath our dinghies quickly attracted our attention. I fired my pistol at them but unfortunately without result. The resistance of the water was too great for the bullets to reach them. That was a pity because we were of the opinion that the blood of the tuna fish would do us good. By midday, the sun was relentlessly burning down on us and the sea got a bit rougher. Otherwise, nothing could be seen or heard. This continued into the early afternoon.

Then suddenly at around 16.00 hrs, a British Beaufighter appeared flying at a height of some 1,500 m (4,900 ft) so I pulled off my khaki shirt and waved it above my head – we were spotted! We each pushed our dinghies outward from the inside to make them appear more rounded as we knew that British dinghies were of a round shape. The Beaufighter continued to circle at around the same height for some 40 minutes. We assumed, probably rightly, that its crew was transmitting our position to its home base.

After the Beaufighter had flown away, the sea became rougher so we tied our dinghies together for safety and later, became so rough that although we were tied quite close together, often we could not see each other because of the waves. For several hours nothing happened until around 22.00 hrs – night had already fallen – when another Beaufighter arrived, circled close to our position and dropped a coloured marker flare in our quadrant. About half-an-hour later, a rescue boat appeared and used a searchlight to scan the sea but due to the height of the waves was unable to locate us. We saw the Beaufighter, still circling in the area, flashing a message in the direction of the rescue boat but could not decipher what the message said. Shortly after this, the aircraft flew away and the boat disappeared from sight. Later the sea calmed down but we never heard the U-Boat that night.

By morning, nothing had happened that was meaningful to us and we felt that we had little hope left. A few seagulls were flying around, the tuna could still be seen swimming beneath our dinghies and we feared that the British had stopped searching for us. Then finally, at around 16.45 hrs, a British Blenheim appeared on the horizon flying towards us at an altitude of about 400 m and almost at the same time, we saw a Wellington bomber appear. We thought, "What a big effort to save

an enemy crew." The Wellington lowered its flaps and flew directly towards us. Hermann Müller feared that we would be bombed, I thought "whatever" but instead, it dropped a container. I detached my dinghy from the others and using a part of one of the broken wooden propeller blades from the Ju, which I had kept, and paddled towards the container floating in the sea. When I finally reached the container, what a surprise: on it was written: "The boat is coming". I cried out to the others, "We are being saved!" Attached to the container were two oars and I used them to row my dinghy back to my comrades.

In the container, we found tins filled with water. Greedily we opened the tins and poured the water down our dried out throats. Around 17.00 hrs the rescue boat turned up. Using my last strength, I climbed the ladder and was the last to enter the rescue boat. On board we received long white underwear, a seaman's sweater and had to turn over our own clothes including our watches. We had nothing else left. Before the rescue, I had already thrown my pistol into the sea. While on board the rescue boat, we were allowed to drink tea but were not yet allowed to eat anything.

The journey to the harbour of Algiers was far from a smooth trip and when we arrived at around 23.00 hrs, we were collected by a surprisingly large delegation in a jeep. The delegation consisted of an American major, an English captain and a French captain. I sat in the back of the jeep. After some time the French officer addressed me in German: "Were are you coming from, were do you live", etc. Then he asked when it was the last time that I was home. I responded: "in July". He wanted to know how the railway station in Stuttgart was looking after the bombardment. He told me that he had been raised in Schwäbisch Gmünd, and knew the area very well. When we said goodbye he mentioned that he would visit me again, but I never saw him again.

We were then transferred to a large old house, taken to the upper floor, and allowed to sleep. We had a single blanket but received our first food only in the morning. One after the other we were collected for interrogation. First went Müller, then Lisinski and then Stolte. I was the last one to be collected and did not see any of my comrades again until after the war. More interrogations followed and several days later, under guard and in the company of Walter Arnold, an observer from KG 100, I was flown to Gibraltar. After a few days stay in a lice-infested cell, Walter Arnold and I were flown to London for further interrogation before being sent to a POW camp in Scotland.

In 1944, the camp was evacuated and we prisoners were transported by lorry to the port of Glasgow where, together with some 1,000 Canadian soldiers on their way home boarded the liner *Île de France* that was lying in the harbour. After a sea journey of eight days, we arrived in Halifax from where we were taken by train to a POW camp at Petawawa, Ontario. Here the prisoners were organised into groups to work in the surrounding woods. During the long winter period, many took courses to learn languages, mathematics, physics and chemistry and we even had a camp orchestra under the direction of Alfred Nitsch<sup>1</sup>, a holder of the *Ritterkreuz* and former member of the 2.(F)/123.

In 1946, I was returned to England where, after spending time in two separate camps I returned home to Germany in February 1947.

<sup>1</sup> Awarded the *Ritterkreuz* on 21 June 1943, Ofw. Alfred Nitsch was taken prisoner on 15 September 1943

## 1.(F)/Aufklärungsgruppe 121

The origins of the 1.(F)/121 may be traced back to Neuhausen where it was formed on 1 May 1934 as the *Fliegerstaffel* Neuhausen, and from 1 October 1937 as the *Fliegerstaffel* 1 Neuhausen, an identity it retained until 1 October 1937 when it was redesignated as the 1.(H)/*Aufkl.Gr.11*. On 1 November 1938, it was re-formed from the Dornier Do 17 F-equipped 1.(F)/*Aufklärungsgruppe* 22 at Prenzlau. During the first few months of 1939, the *Staffel* was partially re-equipped with Dornier 17 P-1s before transferring in August to Stargard-Klützow in preparation for the attack on Poland.

The opening of hostilities on 1 September saw the *Staffel*, under the command of *Oblt.* Klinkicht and operating under the control of *Luftflotte* 1, assigned to carrying out strategic reconnaissance missions over northern Poland. During the course of these missions, the *Staffel* suffered its only casualty of the campaign when, on 5 September, one of its Do 17s was heavily damaged by anti-aircraft fire and force-landed at Neuhausen where it was subsequently written-off. The *Staffel* continued to operate under *Luftflotte* 1 until October when it was transferred to *Luftflotte* 2 where, based initially at Münster-Handorf, it was re-equipped with Heinkel He 111 Hs in preparation for operations in the West. Remaining at Münster-Handorf until May 1940, the *Staffel* suffered several aircraft casualties during this period. The first, on 19 November, saw one of its He 111 H-2s slightly damaged by anti-aircraft fire during an operational sortie; two He 111s collided on 7 March and were severely damaged; and a fourth Heinkel was lost when it flew into a hill near Bielefeld on 12 March, killing the crew of four.

With the opening of the campaign in the West on 10 May 1940, the *Staffel*, now receiving its first Junkers Ju 88 As, operated under the control of *General der Flieger* Alfred Keller's *Fliegerkorps* IV and carried out strategic reconnaissance missions over areas of Belgium, Holland and northern France. On 12 May, the *Staffel* suffered the first combat casualty amongst its new aircraft when Junkers Ju 88 A-1, 7A+CH was shot down by an RAF Hurricane over the Dutch coast while on the same date, one of its surviving Do 17s was shot down by a pair of Curtis Hawk 75 As from the French squadron, GC II/5. Then, on 14 May, a second Ju 88 A-1, 7A+BH, was shot down by a Hurricane of 615 Squadron RAF and on 21 May, one of its He 111s failed to return from an operational sortie.

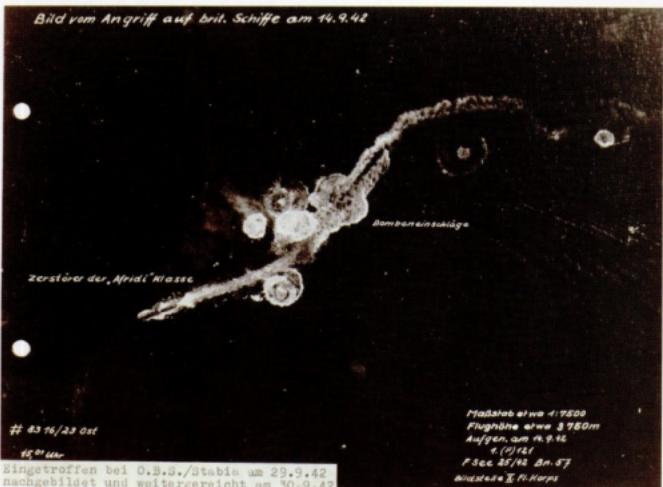
In June, the *Staffel* absorbed the *Aufkl.Staffel* (F)/II. *Flakkorps* and, still under the operational control of *Fliegerkorps* IV, moved to Caen-Carpiquet where it remained until 15 July when it was transferred to Stavanger-Sola and assigned to *Fliegerkorps* X, for which it flew reconnaissance sorties over the North Sea and eastern coastline of the British Isles. On the evening of 11 August, the *Staffel* suffered its first aircraft and crew casualty in these missions when Ju 88 A-1(F), 7A+KH was intercepted by elements of 41 Squadron RAF and forced down at Newton Moor near Whitby, Yorkshire, with the crew being taken prisoner, with the exception of the *Bordmechaniker*<sup>1</sup>, Lt. Heinrich Meyer, who was killed in the interception. On 25 September, a He 111 H-3 and its crew was lost in a crash at Stavanger, a second Ju 88, 7A+NH, was lost on a sortie to Scotland on 11 October and was followed on 23 November by a Ju 88 A-5 which was seriously damaged in a forced-landing at Stavanger following an engine failure.

On 10 December, the *Staffel* was ordered to transfer to Catania, Sicily, to carry out operations in the Mediterranean theatre under *Fliegerkorps* X<sup>2</sup>. Having arrived in Catania by the end of December, while the main elements of the *Staffel* were engaged on reconnaissance sorties over Malta, in early January, a small detachment was sent to Benghazi<sup>3</sup>, Libya, to operate under the control of *Fifü Afrika*<sup>4</sup> with another occasionally sent to Rhodes for operations over the Aegean and eastern Mediterranean.

On 16 January, a Ju 88 A-5(F) was written off after a collision with an Italian aircraft at Benghazi, a second failed to return from a sortie to Malta on 26 January, and on 30 January, a third Ju 88 was destroyed on the ground at Benghazi to prevent it from falling into enemy hands.

In July 1941, the *Staffel* and its detached elements were reunited and transferred to Athens-Tatoi in Greece where, on 26 August, two crewmembers were killed and another two injured when a Ju 88 A-5 was written-off after striking an obstacle on the airfield. On 3 September, three Ju 88s were again detached to North Africa, this time to Derna, Libya, to operate directly under the control of *Fifü Afrika*.

During February 1942, the remainder of the *Staffel* transferred from Athens-Tatoi to North Africa to join up with the detached Ju 88s at Barce in Libya, shortly after which Ju 88 A-5, 7A+NH, was lost on 22 February when it was shot down by P-40 fighters of 450 Squadron RAAF south-east of Gazala. Remaining at Barce until March, the *Staffel* then moved forward to Derna from where, on 5 April, it lost Ju 88 D-1, 7A+FH, over Gasr el Arid, a second being lost on 21 May when Ju 88 D-1, 7A+AH, fell to Hurricanes of 213 Squadron near Burg el Arab while on a reconnaissance sortie to the Tobruk area.



In this photograph taken by an aircraft of the 1.(F)/121 on 14 September 1942 during the raid on Tobruk by Commonwealth forces, it may be that the ship under attack, identified by the interpreter as an Afridi class destroyer, is the Tribal class destroyer HMS Zulu. Severely damaged by fire from the shore batteries and subjected to almost continuous Luftwaffe bombing attacks, in the late afternoon of 14 September a bomb penetrated her engine room and she stopped dead in the water. Taken in tow by the Hunt class escort destroyer HMS Hursley, by early evening she was taking on water rapidly and sank shortly afterwards, less than 160 km (100 miles) from the safety of Alexandria harbour.

In July, Hptm. Erwin Fischer, a long-serving member who had been with the Staffel almost from its beginnings, took command of the Staffel. An energetic and courageous pilot who, although a member of the National Socialist Party and favourite of Göring's, would frequently risk his career to protect his men and the reputation of the Staffel from the wrath of higher authority. Awarded the Ritterkreuz on 12 April 1941, he would go on to receive the Eichenlaub (Oak Leaves) to this award on 10 February 1943 to become the first of the Aufklärungsflieger to be so decorated.

In mid-July, the majority of the aircraft, their crews and ground personnel moved eastwards to Fuka on the Egyptian coast some 100 km (62 miles) to the west of El Alamein and from where, during August, the Staffel recorded the completion of its 2500<sup>th</sup> operational sortie.

At the end of November 1942, the Staffel moved to Wadi Tamet to the east of Tripoli before moving south-west to Bir el Ghem in late December and from where it moved again to Castel Benito in mid-January. Seemingly never in one place for too long, the Staffel continued its nomadic existence, moving again at the end of January 1943 to Gabes-West. Now operating under Fliegerkorps Tunis, it carried out missions over southern Tunisia and western Libya until withdrawing to El Djem in mid-March. Shortly after, the Staffel was transferred to Catania, Sicily and assigned to Fliegerkorps II where it remained until April 1943 when it was ordered to return to Germany.

Arriving at Würzburg to rest and refit, it transferred shortly thereafter to Paris-Buc where it was attached to the Stab/Aufklärungsgruppe 123 for operations in the area of Luftflotte 3, primarily to fly reconnaissance missions over the British Isles. Its main task was to maintain a watch on the British Channel ports to detect signs of a build-up in shipping that would provide a possible indication of preparations for an Allied landing in Europe. As the majority of these missions were carried out at night, four Ju 88 Ts were taken on strength, as it was felt that their higher speed would be an added defence against an increasingly improving British night-fighter force.

During late September/early October, a small number of Ju 88s and their crews were temporarily detached to reinforce the 1.(F)/33, which at that time was operating over the western Mediterranean from Montpellier in southern France.



An undated photograph of Junkers Ju 88 D-1, 7A+LH, of the 1.(F)/121 lies abandoned near Fuka on the Egyptian coast to the west of El Alamein. Finished in 79 upper swan emblem of the 1. Staffel on the nose. The missing skin panels from the vertical fin are a sure indication that they and the swastika painted on them have been removed as souvenirs by Commonwealth troops.

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This Messerschmitt Me 410, 7A+KH, of the 1.(F)/121 was found in this stripped and derelict state at Rheims, France, by advancing Allied troops in the summer of 1944. Finished in 74/74 upper surface colours with a mottle of these colours along the fuselage sides, the open centre of the Balkenkreuz and area behind the code letters has been repainted in a darker green or grey, possibly the result of over-painting the markings of a previous unit.

It was during this period that the *Staffel* incurred an interesting loss when, on 23 October, Ju 88 D-1, W.Nr. 1371, coded 7A+SH, landed at the Spanish airfield of Son San Juan where the aircraft and crew were interned. Although Spanish authorities retained possession of the aircraft, its crew, comprising *Oblt.* Wilhelm Sandsuch, *Lt.* Gustav Wyndemal, *Uffz.* Gerhard Bohn and *Uffz.* Johann Richmann, was repatriated on 11 November 1943.

On 15 November 1943, the *Staffel* recorded its last Ju 88 loss when 7A+CH crashed near Schouwen, Holland, killing the entire crew. Then, at the beginning of December, the *Staffel*, which had been operating a mix of Ju 88s and Fw 190s, began converting to the Messerschmitt Me 410. Following a period of working-up at Buc, at some time in April 1944, the *Staffel* began operating in the night photo-reconnaissance role carrying out raid assessment missions over southern England and later, it carried out similar missions over the Normandy beachhead, the subsequent Allied breakout and the advance on Paris.

In mid-August, the *Staffel* moved briefly to Juvincourt, and on 1 September, transferred to Langendiebach for conversion on to the Messerschmitt Bf 109 G, which began almost immediately with the pilots receiving their training at Herzogenaurach. By mid-October, Bf 109 Gs had replaced most of the Me 410s and a *Staffel* strength return from Langendiebach for 16 October shows it with nine Bf 109 Gs, one Me 410, one Fw 190 and one Arado Ar 96. On 21 October, those pilots still undergoing conversion training at Herzogenaurach were ordered to Gelsenkirchen-Buer to operate with the similarly equipped 5.(F)/123 to gain operational experience on the Bf 109. However, the planned future employment of the *Staffel* was again changed when a few weeks later, the pilots were sent to Lechfeld to undergo training on the Messerschmitt Me 262 A-1a/U3 and seemingly, on 22 November, the *Staffel* was officially renamed as the 1./*Nahaufklärungsgruppe* 1.

However, it would seem that despite this redesignation, a small detachment of the 1.(F)/121 might well have continued to operate until the end of the war in Europe. A listing for a *Staffelkapitän* between November 1944 and May 1945, supports this and an Order of Battle lists elements of the unit at Hohenmauth, Czechoslovakia, on 3 May 1945. Moreover, the *Staffel Feldpostnummer*<sup>5</sup> was neither changed nor deleted. As the final published edition of the Field Post Directory gave its address as Luftgaupostamt XIII<sup>6</sup> (Nürnberg) as of 28 April, it would appear likely that the *Staffel* was ordered to Czechoslovakia at that time and ended its service life near the town of Vysoké Mýto (Hohenmauth).

<sup>1.</sup> Flight engineer

<sup>2.</sup> Ordered to move on the same date to Taormina, Sicily

<sup>3.</sup> At the time this detachment from the 1.(F)/121 became the first air unit of the *Luftwaffe* to be stationed in the North African theatre

<sup>4.</sup> At that time *Oblt.* Martin Harlinghausen

<sup>5.</sup> Field Post Number

<sup>6.</sup> Post Office for *Luftwaffe* Administrative Command XIII

## A Part of One Man's War

As related to the author by Helmut Reinert in 1996.

**B**y September 1943, our aircraft and crew losses on the Eastern Front had become excessive due to a significant improvement in Russian air defences. As the Junkers Ju 88 was primarily a medium-range 'Stuka' and not at all suitable for long distance reconnaissance assignments at high altitudes, our *Staffel*, the 2.(F)/100, was taken out of action and sent to Königsberg-Gütenfeld to convert on to the new Junkers Ju 188. With the re-training of flight and maintenance crews and the refitting of the *Staffel* completed by the end of February 1944, I returned to the war at the beginning of the following month.



*Leutnant Helmut Reinert celebrates the award of the Frontflugsparge in Gold on 30 May 1944 after completing 110 operational reconnaissance flights. At this time, the 2.(F)/100, equipped with the Junkers Ju 188 F-1, was operating from Lublin in eastern Poland under Luftflotte 4. Wearing lightweight summer flying overalls, Helmut Reinert is holding a traditional bouquet and a shield bearing the Staffel emblem to which is attached a laurel wreath bearing the figures '110'.*

In September 1944, I lost my crew. The day that we were meant to fly, I was very ill with food poisoning. Another pilot, still a 'greenhorn' with very little combat experience took my place. Russian fighters shot them down but he made a successful belly-landing with one engine burning. He got out of the aircraft and ran to a thicket of bushes and trees where he went into hiding. He observed that two other crew-members got out and were trying to get a third member out but then the entire plane started burning and thick smoke obscured his vision. He could not see any of the crew any more and did not know if any of them got away. An old-fashioned Russian biplane touched down in a nearby field and Russian soldiers and peasants soon showed up at the site so he had to abandon his observation point and move deeper into the thicket where he was able to hide until nightfall.

He heard a terrific explosion when the plane eventually blew up and black smoke drifted towards where he was hiding. At that time, his biggest problem was fighting an almost unbearable urge to cough! Moving at night only and hiding up during days, evading human settlements and living on berries and stolen fruit only, he eventually made his way through Russian front lines and reached those of the Hungarian forces. At that time, Hungary was still our ally but there he was almost executed because the Hungarians didn't know or speak German and he didn't know the Hungarian

language. They first thought he was a Russian soldier or spy. He was lucky however and taken prisoner, put under guard and taken to the Hungarian Command Headquarters where he was at last able to establish his identity because someone there spoke German. So, many weeks later he was able to return to our *Staffel* and talk about his odyssey.

We never heard anything about the fate of my comrades and friends, Herbert Lengwenus, navigator, Siegfried Weigel, radio operator/gunner and Erwin Brand, flight engineer/gunner. Were they still alive and taken prisoner, ending up in one of the many Siberian prison camps and possibly frozen or starved to death - or were they just shot and buried? God only knows! For many years after the war, I kept contact with their families. The International Red Cross, the German Red Cross as well as the then government of West Germany participated in the search for their names in Russian records - to no avail - no trace of them could be found. They just vanished into the Nirvana. It was for me a very, very painful and demoralising experience.

After their loss, I continued to fly with several crews within the *Staffel* as a kind of 'stand-in' pilot for a total of 19 combat flights. During this time, *Luftwaffe* headquarters in Berlin sent a letter to all long-distance reconnaissance *Staffeln* asking for experienced pilots to apply for transfer to a yet-to-be-established *Staffel* flying single-seat jet planes, namely the Arado Ar 234. I submitted my application and was accepted. At the end of March 1945, I was transferred to the 1.(F)/22 at Burg bei Magdeburg for long-range reconnaissance duties. There I carried out a total of eight flights only in the Ar 234 'Blitz' up until 13 April 1945. On that date during a take-off, the right tyre and wheel blew and the plane ran into a young forest of trees. Four and six-inch tree trunks were snapped like match sticks but cushioned the impact, the speed of which was about 200 km/h (125 mph). The blow-out was most likely caused by bomb fragments laying on the surface of the autobahn from which I had tried to take-off (our base had been heavily raided and was unusable).

I was at first unconscious but woke up fast when behind me things started getting very hot! I had sustained only relatively light injuries on my head, right hand and right leg, mainly on the knee. I could move - thank God! And move I did - fast! The starboard jet engine was torn off and jet fuel spilled on the ground. Parts of the fuselage were burning. The fire was most likely caused by gasoline spilled from the Riedel motor tank - the

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Riedel two-stroke engine used for initial start up of the turbines and was located in the nose cone of each engine. At 800 – 1,000 rpm the glow spark and jet fuel injection system were activated and the Riedel was kept running at full power until the turbo-jet system was able to run on its own power. The Riedel was then shut off.

Now, back to my exodus from the wreck! There was very little left in front of me. The Plexiglas canopy in front and around me had disappeared as well as the flight instruments and periscope box normally suspended from the cabin ceiling had flown against my head and caused quite a concussion. The cabin floor was sliced open to back beneath my seat and there was a pile of dirt and greenery and twig on the floor, I don't remember if the rudder pedals were still there. The control column was there but pointed up at an odd angle. The only thing intact was a light, curved horizontal channel beam about 76 mm (3 in) high around the front of the cockpit, which normally sat at about chest level. The top and bottom curved Plexiglas shells were screwed on to it. This channel beam definitely saved my life and I feel that a good angel or spirit was with me. It was strong enough to cut through whatever was in its way.

This channel was now pointing to the ground, in other words, the fuselage had the tail end pointing up. The right wing and turbo jet engine had broken off at the engine support area. The nose wheel and its undercarriage had disintegrated as well as the right main undercarriage. The left main undercarriage was still intact and holding the tail up. The main fuselage and left wing and engine were still in place but weirdly bent, twisted and torn. Tree trunks stuck through the aluminium skin. There was a lot of dark smoke and the nauseating stench of burning jet fuel, green wood, plastic and paint. Luckily, there was no explosion.

With very little left in front, it was easy to get out. I couldn't walk or run, the right leg hurt like hell! I crawled around the 'hot spot' back to the autobahn. Traffic on the autobahn, which had been blocked for my take-off, was moving again. An infantry motor vehicle crew picked me up, took me back to the starting point, and after talking to our *Staffelkapitän*, brought me to the military hospital in Burg.

#### **Excerpt from the service history of Lt. Karl-Helmut Reinert**

- 10 October 1940 – 21 February 1941: *Flieger Ausbildung Regiment 23*.<sup>1</sup>  
 1 March 1941 – 28 November 1941: *Flugzeugführerschule A/B Werder*.<sup>2</sup>  
 28 November 1941 – 10 December 1942: *Flugzeugführerschule C16*, Magdeburg.  
 15 December 1942 – 19 February 1943: *Blindflugschule I*<sup>3</sup>, Brandis, near Leipzig.  
 19 February 1943 – 9 April 1943: 4./*Fernaufklärer Geschwader 101*.  
 9 April 1943 – 11 May 1943: 2./*Fernaufklärer Ergänzungsgruppe*.  
 12 May 1943 – 22 March 1945: 2.(F)/100.  
 23 March 1945 – 13 April 1945: 1.(F)/22 (date of last wartime flight).

During his wartime service career, Helmut Reinert was the recipient of the following awards: EK I and II<sup>4</sup>, *Frontflug-Spange*<sup>5</sup> for reconnaissance aircrew in bronze, silver and gold and the *Ehrenpokal*<sup>6</sup>.

The last page of the Flugbuch of Helmut Reinert in which is recorded his final aborted flight in Arado Ar 234 W.Nr. 594 referred to in the accompanying story.

Zepter	Flieger	Flug	Bem.	Start		Bemerkungen
				Jahr	Monat	
Ar 234	72-88	Überfliegung	B.W.F.	1945	12.12	Boeing B-52
				1945	12.12	20.12.24.12. *
				1945	12.12	23.12.23.12. *
				1945	12.12	00.12.11.12. *
				1945	12.12	01.12.12.12. *
				1945	12.12	02.12.12.12. *
				1945	12.12	03.12.12.12. *
				1945	12.12	04.12.12.12. *
				1945	12.12	05.12.12.12. *
				1945	12.12	06.12.12.12. *
				1945	12.12	07.12.12.12. *
				1945	12.12	08.12.12.12. *
				1945	12.12	09.12.12.12. *
				1945	12.12	10.12.12.12. *
				1945	12.12	11.12.12.12. *
				1945	12.12	12.12.12.12. *
				1945	12.12	13.12.12.12. *
				1945	12.12	14.12.12.12. *
				1945	12.12	15.12.12.12. *
				1945	12.12	16.12.12.12. *
				1945	12.12	17.12.12.12. *
				1945	12.12	18.12.12.12. *
				1945	12.12	19.12.12.12. *
				1945	12.12	20.12.12.12. *
				1945	12.12	21.12.12.12. *
				1945	12.12	22.12.12.12. *
				1945	12.12	23.12.12.12. *
				1945	12.12	24.12.12.12. *
				1945	12.12	25.12.12.12. *
				1945	12.12	26.12.12.12. *
				1945	12.12	27.12.12.12. *
				1945	12.12	28.12.12.12. *
				1945	12.12	29.12.12.12. *
				1945	12.12	30.12.12.12. *
				1945	12.12	31.12.12.12. *
				1945	12.12	32.12.12.12. *
				1945	12.12	33.12.12.12. *
				1945	12.12	34.12.12.12. *
				1945	12.12	35.12.12.12. *
				1945	12.12	36.12.12.12. *
				1945	12.12	37.12.12.12. *
				1945	12.12	38.12.12.12. *
				1945	12.12	39.12.12.12. *
				1945	12.12	40.12.12.12. *
				1945	12.12	41.12.12.12. *
				1945	12.12	42.12.12.12. *
				1945	12.12	43.12.12.12. *
				1945	12.12	44.12.12.12. *
				1945	12.12	45.12.12.12. *
				1945	12.12	46.12.12.12. *
				1945	12.12	47.12.12.12. *
				1945	12.12	48.12.12.12. *
				1945	12.12	49.12.12.12. *
				1945	12.12	50.12.12.12. *
				1945	12.12	51.12.12.12. *
				1945	12.12	52.12.12.12. *
				1945	12.12	53.12.12.12. *
				1945	12.12	54.12.12.12. *
				1945	12.12	55.12.12.12. *
				1945	12.12	56.12.12.12. *
				1945	12.12	57.12.12.12. *
				1945	12.12	58.12.12.12. *
				1945	12.12	59.12.12.12. *
				1945	12.12	60.12.12.12. *
				1945	12.12	61.12.12.12. *
				1945	12.12	62.12.12.12. *
				1945	12.12	63.12.12.12. *
				1945	12.12	64.12.12.12. *
				1945	12.12	65.12.12.12. *
				1945	12.12	66.12.12.12. *
				1945	12.12	67.12.12.12. *
				1945	12.12	68.12.12.12. *
				1945	12.12	69.12.12.12. *
				1945	12.12	70.12.12.12. *
				1945	12.12	71.12.12.12. *
				1945	12.12	72.12.12.12. *
				1945	12.12	73.12.12.12. *
				1945	12.12	74.12.12.12. *
				1945	12.12	75.12.12.12. *
				1945	12.12	76.12.12.12. *
				1945	12.12	77.12.12.12. *
				1945	12.12	78.12.12.12. *
				1945	12.12	79.12.12.12. *
				1945	12.12	80.12.12.12. *
				1945	12.12	81.12.12.12. *
				1945	12.12	82.12.12.12. *
				1945	12.12	83.12.12.12. *
				1945	12.12	84.12.12.12. *
				1945	12.12	85.12.12.12. *
				1945	12.12	86.12.12.12. *
				1945	12.12	87.12.12.12. *
				1945	12.12	88.12.12.12. *
				1945	12.12	89.12.12.12. *
				1945	12.12	90.12.12.12. *
				1945	12.12	91.12.12.12. *
				1945	12.12	92.12.12.12. *
				1945	12.12	93.12.12.12. *
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				1945	12.12	95.12.12.12. *
				1945	12.12	96.12.12.12. *
				1945	12.12	97.12.12.12. *
				1945	12.12	98.12.12.12. *
				1945	12.12	99.12.12.12. *
				1945	12.12	100.12.12.12. *
				1945	12.12	101.12.12.12. *
				1945	12.12	102.12.12.12. *
				1945	12.12	103.12.12.12. *
				1945	12.12	104.12.12.12. *
				1945	12.12	105.12.12.12. *
				1945	12.12	106.12.12.12. *
				1945	12.12	107.12.12.12. *
				1945	12.12	108.12.12.12. *
				1945	12.12	109.12.12.12. *
				1945	12.12	110.12.12.12. *
				1945	12.12	111.12.12.12. *
				1945	12.12	112.12.12.12. *
				1945	12.12	113.12.12.12. *
				1945	12.12	114.12.12.12. *
				1945	12.12	115.12.12.12. *
				1945	12.12	116.12.12.12. *
				1945	12.12	117.12.12.12. *
				1945	12.12	118.12.12.12. *
				1945	12.12	119.12.12.12. *
				1945	12.12	120.12.12.12. *
				1945	12.12	121.12.12.12. *
				1945	12.12	122.12.12.12. *
				1945	12.12	123.12.12.12. *
				1945	12.12	124.12.12.12. *
				1945	12.12	125.12.12.12. *
				1945	12.12	126.12.12.12. *
				1945	12.12	127.12.12.12. *
				1945	12.12	128.12.12.12. *
				1945	12.12	129.12.12.12. *
				1945	12.12	130.12.12.12. *
				1945	12.12	131.12.12.12. *
				1945	12.12	132.12.12.12. *
				1945	12.12	133.12.12.12. *
				1945	12.12	134.12.12.12. *
				1945	12.12	135.12.12.12. *
				1945	12.12	136.12.12.12. *
				1945	12.12	137.12.12.12. *
				1945	12.12	138.12.12.12. *
				1945	12.12	139.12.12.12. *
				1945	12.12	140.12.12.12. *
				1945	12.12	141.12.12.12. *
				1945	12.12	142.12.12.12. *
				1945	12.12	143.12.12.12. *
				1945	12.12	144.12.12.12. *
				1945	12.12	145.12.12.12. *
				1945	12.12	146.12.12.12. *
				1945	12.12	147.12.12.12. *
				1945	12.12	148.12.12.12. *
				1945	12.12	149.12.12.12. *
				1945	12.12	150.12.12.12. *
				1945	12.12	151.12.12.12. *
				1945	12.12	152.12.12.12. *
				1945	12.12	153.12.12.12. *
				1945	12.12	154.12.12.12. *
				1945	12.12	155.12.12.12. *
				1945	12.12	156.12.12.12. *
				1945	12.12	157.12.12.12. *
				1945	12.12	158.12.12.12. *
				1945	12.12	159.12.12.12. *
				1945	12.12	160.12.12.12. *
				1945	12.12	161.12.12.12. *
				1945	12.12	162.12.12.12. *
				1945	12.12	163.12.12.12. *
				1945	12.12	164.12.12.12. *
				1945	12.12	165.12.12.12. *
				1945	12.12	166.12.12.12. *
				1945	12.12	167.12.12.12. *
				1945	12.12	168.12.12.12. *
				1945	12.12	169.12.12.12. *
				1945	12.12	170.12.12.12. *
				1945	12.12	171.12.12.12. *
				1945	12.12	172.12.12.12. *
				1945	12.12	173.12.12.12. *
				1945	12.12	174.12.12.12. *
				1945	12.12	175.12.12.12. *
				1945	12.12	176.12.12.12. *
				1945	12.12	177.12.12.12. *
				1945	12.12	178.12.12.12. *
				1945	12.12	179.12.12.12. *
				1945	12.12	180.12.12.12. *
				1945	12.12	181.12.12.12. *
				1945	12.12	182.12.12.12. *
				1945	12.12	183.12.12

# Proposed Future Reconnaissance Trends

The following notes on the future plans for *Luftwaffe* reconnaissance include those which were obtained directly from copies of the personal files of the *General der Aufklärungsflieger*, *Generalmajor Karl-Henning von Barsewisch*, which were captured in May 1945.

The Dornier Do 335 would be used for long-range reconnaissance over the Atlantic, the requirements being that four or five aircraft would be supplied per month until 25 to 30 were available. It had been concluded from test flights that the Do 335 would be a suitable aircraft for this task. This aircraft was also considered to be a suitable substitute for the Junkers Ju 388 in long-range daylight missions.

For long-range, high altitude reconnaissance, 10 Hütter Hü 211 aircraft were on order for testing purposes (an aircraft based on the Heinkel He 219 airframe married to an 80 m (262 ft) span wing and powered by a pair of Jumo 222 engines).

The Arado Ar 234 would be required for photographic reconnaissance of areas of England and France. It was desired that these aircraft would have an operating radius of 1,200 km (750 mls) from their base. It was expected that delivery would be at a rate of three aircraft per month.

For long-range night reconnaissance, the Junkers Ju 388L had been selected. In operational tests over the Eastern Front, it had been found a satisfactory aircraft for this type of mission, and was also considered suitable for sea and weather reconnaissance tasks. An adequate number of these aircraft was requested for the performance of these missions. A notation had been made that the Ju 388 had been chosen as 'no other multi place aircraft may be available for long-range reconnaissance duties in the near future'.

Two high-altitude reconnaissance squadrons were expected to be formed with a requirement for 125 aircraft (type not specified). It was thought that 125 aircraft would be a suitable quantity with which to supply these units for operations and transitional training for crews.

## Conclusion

Thus, from its unveiling in 1935 until the end of the Second World War, the aircraft inventory of the *Luftwaffe* progressed from antiquated biplanes to advanced jet aircraft and helicopters. Although never being accorded the recognition that their missions deserved, the reconnaissance units served in every theatre of *Wehrmacht* operations carrying out a wide variety of missions, often under very difficult circumstances, ranging from battlefield and weather reconnaissance to long-range maritime patrols. Their aircraft always made up a high proportion of the types deployed in any given theatre of operations, and by 8 May 1945, no less than 21 per cent of the total operational strength of the *Luftwaffe* comprised, reconnaissance aircraft, 13 per cent of which were assigned to tactical reconnaissance duties. While many of these units were disbanded as the war in Europe drew to a close, those that remained diligently continued to carry out their operations into the final hours.



Taken after its capture and transfer to the United States, this view of Junkers Ju 388 L-1, W.Nr. 560049 in spurious markings applied by the Americans, clearly shows the bulged ventral pannier to carry a pair of Rb 50/30 or 75/30 cameras or, for the night role, a pair of NRB 40/25s or 50/25s. Although issued to the Luftwaffe in small numbers, it never became fully operational in its intended role. This particular aircraft is currently in storage at the National Air and Space Museum in the USA in a dismantled state.

The Rb 50/18 camera installation in the bomb bay of the Dornier Do 335 V-3 in which, because of the lack of height in the bay, the camera was installed on its side and the lens focused through a prismatic mirror arrangement to allow images to be taken through an opening in the bay doors.



Seen here taxying out at the beginning of a test flight, the Dornier Do 335 V-3 was delivered to the 1./Versuchsverband OKL and test flown on a number of occasions by Lt. Wolfgang Ziese. Although potentially an extremely effective aircraft, continued severe overheating problems plagued its rear engine and prevented Ziese from making any of the planned reconnaissance flights over the naval anchorage at Scapa Flow and southern England.



#### Dornier Do 335 V-3, T9+ZH of 1./Versuchsverband OKL

This aircraft may have been finished in one of two upper surface splinter pattern schemes, these being 70/71 or 81/82 or any combination of these four colours with the under surfaces most likely finished in 76 with the propeller blades and spinners in 70. Assigned the code of T9+ZH, the T9 was applied at approximately one-fifth the height of the ZH and in a slightly lower location than usually seen due to the position of the rear engine exhaust pipes. Because of the restricted rear view for the pilot, to improve visibility to the rear, a pair of rear-view mirrors were fitted to the internal canopy framework on the port and starboard sides and housed within clear tear-drop shaped fairings. The perspex panels immediately forward of these streamlined fairings each contained a hinged clear panel which could be opened inwardly to facilitate forward vision when needed.

Bildstelle personnel load the camera magazines for the two Rb 50/30 cameras into the rear camera compartments of Arado Ar 234 B, T9+GH, W.Nr.140112. Usually flown by Obt. Horst Götz of Kommando Sperling, it was the first aircraft of the B series to be fitted with cameras.



Ground crew prepare to attach the towing bar to the nose gear leg of Werner Muffey's Arado Ar 234B/p, T9+KH. Clearly visible on the lower forward fuselage is the jet-propelled sparrow motif. It is believed that this aircraft was the only one of Kommando so decorated.



#### **Arado Ar 234 B-2/p, code T9+KH, W.Nr. 140151 of Kommando Sperling**

The aircraft was probably finished in an upper splinter pattern of the greens 70 and 71 with under surfaces in either 65 or 76; the under wing Walter booster rocket motors had natural metal bodies with a brown fabric parachute case on the front. The T9 of the unit code was applied in white at one-fifth the height of the remaining two letters while the aircraft Werk Nummer, applied to the top of each side of the fin in black, had the first three digits applied at approximately half the height of the remaining three. The aircraft also carried a small white motif on the port side of the nose comprising a jet-propelled sparrow holding a camera.

# 1942-1945

## Listing of known Reconnaissance and Liaison Unit codes

**Letter/Number**

- A4** Luft.Beob.Staffel 3
- A6** AufklGr.(F)/120
- B1** Verbindungsstaffel 53
- B2** Luft.Beob.Staffel 7. Also associated with *Luft.Beob.Staffel 8*
- B5** Stab./FAGr. 5
- B7** Wekusta 1/Wekusta – Luftflotte 1
- C2** AufklGr.(H)/41
- C5** Associated with Wekusta 26 – Luftflotte 6
- D1** AufklGr.(See)/126 (later SAGr. 126), 2./SAGr. 125
- D7** Wekusta 1/ObdL (Staffel letter H), Wetterkette Stavanger (Staffel letters V to Z), Wekusta 1/OKL, Wekusta 2/ObdL (Staffel letter K), Wekusta 3 (Staffel letter L), Wekusta 5 – Luftflotte 5 (Staffel letter N), Wekusta 6 (Staffel letter P)
- E3** NAGr. 8
- F2** Erg. Gr (F). Rahmel
- F3** Verbindungsstaffel Ob.Südwest
- F5** Verbindungsstaffel 5
- F6** AufklGr.(F)/122
- F7** NAGr. 6
- F8** KG 40
- G2** AufklGr.(F)/124, Aufkl. Kette Lappland (Staffel letter K)
- G8** Believed to be associated with Aufkl. Staffel AOK 20
- H1** AufklGr.(H)/12
- H7** Aufkl/Staffel (F) Ostsee (Staffel letter H), Aufkl.Schwarm Reval.
- H8** 4./AufklGr.(H)/33
- I8** 3.(F)/31
- J2** NAGr. 3
- J3** NAGr. 9
- J8** NAGr. 2
- K4** Wekusta 7 (Staffel letter A)
- K6** KüFlGr. 306 and later KüFlGr. 406 from November 1939. Also allocated to the 1./KüFlGr. 906 (Staffel letter M) from July 1943
- K7** Erg.Staffel (F) Nacht, which became Erg.Gr.Nacht in April 1943
- K9** AufklGr.ObdL
- L2** Briefly used by the 4/(H)/21 and the 2.(F)/ObdL, this code was assigned to *Lehrgeschwader 2*
- L8** NAGr. 8
- M2** KüFlGr. 106, which became KGr.106 in May 1941
- M4** 7 & 8 Staffeln of AufklGr. 32 (Staffel letters R & S). Also associated with Aufkl.Staffel Stoluft Oberost and Aufkl.Staffel/Oberbefehlshaber Ost
- M7** KüFlGr. 806, which became KGr. 806 in November 1939 and then the III./KG 54 in September 1942
- M9** NAGr. 14
- N5** Erg.Aufkl.Gr. Doberitz, which became Erg.Nahaufkl.Gr. Bromberg in February 1942 and then NAGr. Bromberg in November 1942
- P2** AufklGr.(H)/21
- P5** Sonderstaffel/KüFlGr. 406 (Staffel letter H), later became Tranz-Ozean Staffel/KgrzbV 108)
- Q1** NAGr. 1
- Q5** Wekusta 27
- S4** KüFlGr. 506, which became KGr. 506 in 1941
- T1** Aufklärungsgruppe 10 'Tannenberg'
- T3** Bordfliegergruppe 196
- T4** Verbindungsstaffel Luftflotte 2
- T5** AufklGr.(F)/ObdL which became AufklGr. 100 in January 1943. Code also used by Wekusta/ObdL
- T9** Versuchsverband/ObdL, code also used by Kdo. Bonow, Kdo.Götz, Kdo.Hecht, Kdo. Sommer and Kdo.Sperling

- U2** NAGr. 5. Also associated with NAGr. Sell  
**V7** AufklGr.(H)/32  
**X4** Aufklärungsstaffel (See) 22 May 1943. Became the 1./SAGr. 129 in 1943  
**X8** Verbindungsstaffel 58 (Staffel letter L)  
**X9** NAGr. 11  
**Y2** Believed assigned to the Stab of NAGr. 6  
**Y9** NAGr. 12

**Number/Letter**

- 1A** As yet unidentified Dornier Do 17 P-equipped Aufklärungs unit on the Eastern Front  
**1B** Wekusta 5/Wekusta – Luftflotte 5 (Staffel letter H). Also associated with Wetterkette Nord and Wekusta Banak  
**1C** Luft-Beob.Staffel 8 (Staffel letter F)  
**1K** Küstenstaffel Krim in mid-1943 (Staffel letter U)  
**1R** Aufkl.Kette (F) Lappland (Staffel letter H) – associated with AOK Lappland. Also associated in some documents with Aufkl.Kette Norwegen  
**2Q** NAGr. 15, also associated with the 12.(H)/AufklGr.13 Nacht Staffel  
**2T** Stab/FAGr. 4, also possibly used by the 1.(H)/AufklGr.10 for a short period of time  
**2U** NAGr. 13  
**4B** Wekusta 3  
**4E** AufklGr.(H)/13  
**4N** AufklGr.(F)/22  
**4Q** Aufklärungsstaffel 7. Fliegerdivision/Aufklärungsstaffel XI. Fliegerdivision,(Staffel letter H) and Verbindungsstaffel 7. Fliegerdivision  
**4S** Aufklärungsstaffel II. Fliegerkorps (Staffel letter H)  
**4T** Wekusta 51 (Staffel letter H)  
**4U** AufklGr.(F)/123  
**5D** AufklGr. 31  
**5F** AufklGr.(H)/14  
**5H** NAGr. 16  
**5M** Wekusta 26, became the 6.(F)/122 in June 1944. Also used by Wetterkette Nord  
**5Z** Wekusta 76 (Staffel letter A)  
**6A** Verbindungsstaffel Luftflotte 1 (Staffel letter W)  
**6F** Luft-Beob.Staffel 4  
**6H** Fl.Erg.Gr.(See) Kamp (Staffel letters, B. H. K. L. & M). Also associated with Erg.Aufkl.Gr.See  
**6I** KüFI Gr. 706. Became SAGr. 130 in 1943. Code also believed to have briefly been used by some element of BFGr. 196  
**6J** Fl.Erg.Gr.(See) (Staffel letters H – L)  
**6K** AufklGr.(H)/23  
**6L** 10(See)/LG 2  
**6M** AufklGr.(F)/11. Code also used by Küstenstaffel Krim (Staffel letter L) prior to mid-1943  
**6R** AufklGr.(See) 127. Became SAGr. 127 in 1943  
**6T** AufklGr. Fleischmann, later NAGr. Fleischmann  
**6W** 5./BFGr. 196. Became SAGr. 128 in 1943  
**7A** AufklGr.(F)/121  
**7R** AufklGr.(See) 125. Became SAGr. 125 in 1943  
**7T** KüFI Gr. 606. Became KGr. 606 in November 1939  
**8H** 1, 2 & 3 Staffeln AufklGr.(F)/33. Also attributed to the Stab/FAGr. 4  
**8I** 3.(H)Pz/AufklGr.16  
**8L** KüFI Gr. 906  
**9G** Flieger Aufklärungsstaffel Perleberg  
**9H** Aufklärungsstaffel Kroatien (Staffel letter L). Also associated with NAGr. Kroatien and NSta.Kroatien  
**9V** FAGr. 5